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Health Services

**MANAGING CLINICAL ENGINEERING
PROGRAMS**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction tells how to establish a clinical engineering program for Air Force medical treatment facilities. It implements the clinical engineering support policy in AFR 41-2, *Medical Support*. The clinical engineering program includes medical equipment maintenance, facility management, and medical equipment management. This instruction covers two of these three functional areas: medical equipment maintenance (**Chapter 2** and **Chapter 3**) and facility management (**Chapter 4**). See AFMAN 23-110, volume 5, for instructions on establishing a medical equipment management program.

SUMMARY OF CHANGES

This publication contains the requirements, information, and procedures formerly in AFR 167-7. It reorganizes instructions to correspond to areas of responsibility, removes self-inspection checklists, defines the responsibilities of equipment operators, and reduces the level of detail in records management instructions.

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Chapter 1

THE CLINICAL ENGINEERING PROGRAM

1.1. Purpose. The clinical engineering program combines multiple functional areas to ensure efficient, effective and coordinated technical services are provided to support the USAF Medical Service.

1.2. Program Components. A clinical engineering program is managed by a qualified AFSC 41AX MSC officer or civilian equivalent clinical engineer and consists of a combination of two or more of the following functional areas:

1.2.1. Medical equipment maintenance includes planning, selecting, installing, modifying, maintaining and advising on application of medical equipment.

1.2.2. Facility management includes acquiring and managing the services necessary for operating, maintaining and modifying medical facilities and utility systems.

1.2.3. Medical equipment management includes authorizing, procuring, installing, and in-use accounting for equipment in medical treatment facilities. See AFMAN 23-110, volume 5, Chapter 18 for instructions on this part of the program.

1.2.4. These functions retain their individual identity where an integrated clinical engineering program is not implemented. Under these conditions, the purpose and objectives apply to all functions.

1.3. Program Objectives. Clinical engineering program personnel:

1.3.1. Manage health care technology to ensure equipment and medical treatment facilities are operational, safe, and properly configured to meet the peacetime and wartime missions of the medical service.

1.3.2. Ensure a systematic approach for the maintenance and management of equipment and facilities is developed.

1.3.3. Ensure executive management and health care providers are informed on matters relating to technology and facility planning, safety, and quality assurance and risk management issues relating to medical equipment or facilities. Informs them of new technologies and their applications.

1.3.4. Ensure compliance with appropriate Joint Commission on Accreditation of Healthcare Organization (JCAHO) standards, National Fire Protection Association (NFPA) guidelines, all Federal regulations, and all appropriate state regulations.

1.3.5. Ensure quality assurance and safety programs that document the identification and resolution of equipment and facility hazards are established.

1.3.6. Ensure medical personnel are trained on the safe operation and effective user maintenance of equipment and support systems.

1.4. Responsibilities:

1.4.1. The Air Force Medical Logistics Office, Clinical Engineering Branch (AFMLO/FOM):

- Formulates policy and guidance for the Air Force clinical engineering programs.

- Develops technical support programs to meet operational requirements of the clinical engineering program.
- Develops programs to ensure that equipment systems are serviceable, operable, and configured to meet both peacetime and wartime mission requirements.
- Provides guidance and technical assistance to MAJCOMs and medical treatment facilities.
- Monitors program operations including interservice and interagency support agreements for intermediate maintenance services and for depot maintenance by United States Army depots.
- Manages the Medical/Dental Investment Equipment Program. *NOTE:* All references to medical equipment apply equally to dental equipment unless noted otherwise.
- Provides guidance to organizations purchasing major equipment systems. Reviews contract specifications, installation plans and support plans during the authorization process.
- Provides support for central procurement of major medical equipment systems by initiating contract actions, reviewing technical specifications and evaluating contract awards.
- Evaluates medical equipment and facility-related hazards and provides field guidance or modification instructions for corrective action. Assists in incident investigations involving medical equipment upon request.
- Serves as personnel consultant to HQ AFMPC for MSC officers qualified as clinical engineers.
- Serves as the functional manager for the 4A2X1 career field.
- Monitors the formal training required for the clinical engineering programs.

1.4.2. Major Commands (MAJCOM):

- Implement and supervise the medical equipment maintenance, facility management, and equipment management programs according to policies and procedures established by HQ United States Air Force.
- Coordinate personnel authorizations and assignments within the command.
- Coordinate training of clinical engineering officers, BMETs, and civilian equivalents with AETC.
- Fund and monitor any intermediate-level maintenance activities within the command.
- Coordinate requirements and problems in all areas of clinical engineering support programs with AFMLO/FOM.

1.4.3. Director of Base Medical Services (DBMS) and Administrator:

1.4.3.1. For organization maintenance:

- Establish clinical engineering programs to ensure a safe environment for patients, staff, and visitors.
- Provide adequate facilities, equipment, funding, and supply support for clinical engineering functions.
- Ensure in-use and war reserve materiel (WRM) equipment are in a serviceable condition at all times.

- Establish local procedures and controls to prevent unauthorized repair and modification of equipment and utility systems.

1.4.3.2. For organizations designated as MERCs:

- Ensure the availability of an equitable portion of the MERC resource to provide non-priority support to all medical activities in the geographical area of responsibility.
- Provide priority support according to the unit's precedence rating.
- Provide adequate facilities, equipment, funding, and supply support for intermediate level maintenance functions.

1.4.4. The Director of Medical Logistics (DML):

- Provides overall supervision of the clinical engineering program.
- Ensures that the individual managing each program have the appropriate training and background.
- Staffs clinical engineering and facility management functions adequately to carry out the program.
- Ensures development of technical support capabilities for all operational requirements including intermediate maintenance and engineering requirements.
- Ensures coordination between the various functions where management has not implemented an integrated clinical engineering program.
- Ensures preparation and maintenance of the facility master plan (FMP) and equipment modernization plans and their coordination with the MTF executive committee.
- Ensures that the facility has an active and integrated safety program in compliance with current Air Force and JCAHO standards.
- Serves as the office of primary responsibility (OPR) to develop local operating instructions (OI) as needed.

1.5. Personnel Requirements.

1.5.1. Managers of the clinical engineering program and the individual functions should be professionals with sufficient levels of education, experience, and accomplishment to effectively and safely manage medical devices and facility systems.

1.5.1.1. AFSC 41AX MSC officers qualified as clinical engineers, or civilians with an equivalent background manage the clinical engineering program.

1.5.1.2. Functions within the clinical engineering program are managed by AFSC 41AX MSC officers qualified as clinical engineers, senior AFSC 4A2X1 BMET, or civilians with an equivalent background.

1.5.1.3. Commanders of ANG units without AFSC 4A2X1 personnel should appoint an officer or a noncommissioned officer to manage the clinical engineering functions. The appointed individuals must be familiar with these programs and work for the program both during unit training assembly (UTA) and the normal workweek. ANG medical units without AFSC 4A2X1 personnel should use AFI 25-201, *Host Tenant Support Responsibilities of US Air Force Organizations*,

(formerly AFR 11-4), agreements, or civilian contracts to meet maintenance requirements outlined in this instruction.

1.5.1.4. Manpower requirements are based on Air Force Manpower Standard (AFMS) 5110 and its accompanying charts.

1.5.1.5. Assign duties according to the capabilities and skills of the personnel. Supervisors should match skill levels and training to the complexity of the tasks. Specialty Training Standard 4A2X1 specifies skill and knowledge requirements.

1.5.2. BMET personnel serve at medical facilities to maintain medical equipment or manage the facility. These technicians don't routinely perform those maintenance tasks for which the base civil engineer or other agency is responsible.

1.5.3. BMETs will be formally trained and have been awarded an AFSC 4A2X1. (See AFI 36-2204, *Airman Retraining Program*, and AFI 36-2101, *Military Personnel Classification*).

1.5.4. The 384th MTS/HTSR, Sheppard AFB TX, conducts the formal training courses. The courses cover fundamentals in medical equipment and facilities management as well as supplemental special topics

1.5.4.1. AFCAT 36-2223, *US Air Force Formal Schools*, contains a complete description of the courses and application procedures for supplemental courses.

1.5.4.2. An active continuing education program is essential for effective development of personnel. Continuing education should consist of on-the-job training and periodic supplemental training either from the 384th MTS/HTSR or commercial sources.

1.5.4.3. AFI 36-2201, *Developing Military Training Programs*, authorizes training with industry to meet training requirements and gives procedures for application.

1.5.4.4. BMETs should pursue professional military education. The Air Force encourages them to complete their Community College of the Air Force (CCAF) Associate in Applied Science degree in "Biomedical Equipment Technology."

1.5.4.5. Officers should participate in education programs sponsored by the Air Force Institute of Technology (AFIT) and seek advanced degrees in clinical engineering, facilities management, or logistics.

1.5.4.6. BMETs and clinical engineers should seek national certification from the International Certification Commission for Clinical Engineering and Biomedical Technology.

1.5.4.7. You can get information on certification requirements from International Certification Commission, c/o AAMI, 1901 North Ft Meyer Dr., Suite 602, Arlington VA 22209-1699, (703) 525-4890. AFI 41-104, *Professional Board and National Certifications Examination*, tells about funding for temporary duty (TDY) and reimbursement of fees and expenses for certification examinations.

1.6. Overview of This Instruction:

1.6.1. This instruction addresses two of the functional areas that compose the clinical engineering program: medical equipment maintenance and facility management. (Instructions for establishing a medical equipment management program can be found in AFMAN 23-110, volume 5.)

1.6.2. Medical equipment maintenance instructions are divided into two parts:

1.6.2.1. **Chapter 2** provides guidance on establishing a maintenance program at the local organizational level. The information is divided into working areas and sub-organized based on the life cycle of equipment; for example, prepurchase evaluation comes before initial inspection.

1.6.2.2. **Chapter 3** provides additional maintenance guidance on establishing a regional intermediate maintenance program

1.6.3. Facility management is in **Chapter 4** and is arranged by functional areas.

Chapter 2

ESTABLISHING AN ORGANIZATIONAL MEDICAL EQUIPMENT MAINTENANCE PROGRAM

Section 2A—Administering the Program

2.1. Program Elements. The medical equipment maintenance program ensures that medical equipment is serviceable, safe, and properly configured to meet the peacetime and wartime missions of the medical service. The program provides:

- Technical assistance in evaluating and selecting medical equipment before it is purchased, to ensure that the Air Force acquires equipment with optimum performance and safety criteria.
- Initial inspections, scheduled preventive maintenance (PM), safety evaluations, and calibration of equipment and supporting utilities.
- A responsive repair service that minimizes equipment downtime.
- A quality assurance program for equipment that identifies and corrects equipment hazards and defects.
- Assistance in training medical personnel on how to operate clinical equipment safely and effectively.
- Documentation that meets both regulatory and accreditation requirements and the needs of the overall medical equipment management program.

2.2. Responsibilities. These responsibilities are furnished as minimal guidelines and are not intended to limit management functions to the areas listed:

2.2.1. The Clinical Engineering Officer or Senior BMET:

- Implements and manages the organization's medical equipment maintenance program.
- Ensures medical equipment maintenance support for USAFR and ANG medical activities located at or near the facility.
- Obtains required facilities and equipment for the organization's maintenance program.
- Ensures WRM equipment is maintained in a serviceable condition at all times.
- Plans for equipment support in the conceptual phase of each new equipment system.
- Develops and publishes local policies and OIs as required.
- Establishes a work control and priority system to ensure uninterrupted service to supported activities.
- Establishes a periodic maintenance and inspection schedule and ensures that maintenance personnel perform scheduled maintenance.
- Manages the appropriate use and on-hand supply of repair parts.
- Arranges contract maintenance only for those systems for which the Air Force does not have enough training, tools, test equipment, staff, and so on.

- Establishes equipment records for nonvehicular medical equipment in ambulances, such as life-support equipment, oxygen systems, rescue, and first aid equipment and ensures it is maintained regularly.
- Performs self inspections and obtains customer evaluations to determine the adequacy, quality, and effectiveness of maintenance support and the degree of compliance with HQ United States Air Force, MAJCOM, and local maintenance directives. Self-inspections and evaluations allow problem areas to be identified and corrected before they become major issues.

2.2.2. BMETs:

- Support the objectives outlined in this AFI.
- Maintain medical equipment to the standards defined or specified by this instruction.
- Ensure historical maintenance data is recorded accurately.
- Ensure equipment guarantees and service warranties are processed and registered with the manufacturer and acquire warranty service when appropriate.
- Monitor commercial contract maintenance services to see that they're performing maintenance according to contract agreements.
- Strive to help medical personnel to efficiently and effectively deliver health care.
- Offer initial and follow-on operator maintenance training to people who use equipment.
- Make sure that equipment operators perform appropriate user maintenance.

2.2.3. Equipment Operators. Serve a key function regarding the proper operation and maintenance of medical equipment since they use the equipment to diagnose or provide therapy to patients.

2.2.3.1. Overall Responsibilities:

- Ensure equipment is used only for purpose for which it was designed.
- Operate equipment in accordance with operator's manuals.
- Care for and keep up equipment so that it is always operating properly and in serviceable condition.
- Should not attempt repairs beyond the operating techniques described in the operator's manual.

For day-to-day maintenance and pre-use checkout:

- Ensure equipment requiring calibration is calibrated before use on a patient.
- Replace accessible light bulbs, batteries, tubing, and supplies.
- Tighten nuts, bolts, and screws when necessary.
- Routinely clean and dust equipment.

During use:

- Watch for conditions that may injure the patient or damage the equipment.
- Investigate and report to the BMET any abnormalities such as erratic meter responses, electrical flashing or arcing, or unusual sounds that may indicate malfunction.

After operating equipment:

- Clean equipment.

- Check batteries.
- Check fluid levels and replenish or drain if appropriate.
- Turn off switches.
- Properly store and protect the equipment.

2.3. Finding Additional Information and Guidance:

2.3.1. The publications listed in attachment 3, paragraph A1, are essential to the effective operation of a medical equipment maintenance program.

2.3.2. The medical equipment maintenance activity must keep a current file of these publications or have immediate access to the publications in a nearby location. Maintenance personnel must be familiar with each publication.

2.3.3. The medical equipment maintenance support section may want to obtain the publications listed in attachment 3, paragraph A2.

2.3.4. Obtain the commercial publications from the sources listed in attachment 3, paragraph A3.

2.3.5. Attachment 3, paragraph A4, lists forms needed to effectively manage a medical equipment maintenance activity.

2.3.6. Base activities may communicate directly with their respective regional MERCs for technical or maintenance management assistance. Activities may also contact the following agencies for special assistance:

2.3.6.1. Program guidance and Air Force career guidance (AFSC 4A2X1): AFMLO/FOM, 1423 Sultan Street, Frederick MD 21702-5006; DSN 343-7487/2091, FAX 343-2958; COMMERCIAL (301) 619-7487, FAX (301) 619-2958.

2.3.6.2. MAJCOM maintenance or manning assistance: Medical logistics representative or senior noncommissioned officer 4A2X1 at the MAJCOM, if assigned.

2.3.6.3. Training: 384th MTS/HTSS, 925 Missile Road, Stop 114, Sheppard AFB TX 76311-2251.

- *Basic Course, DSN 736-4009*
- *Supplemental Courses, DSN 736-2771*
- *Career Development Course, DSN 736-6244*

2.3.6.4. Medical Logistics (MEDLOG) system. SSC/AQSSF, Gunter AFB AL 36114-6340; DSN 446-4213.

2.3.6.5. X-ray equipment acquisition. DPSC-MX, 2800 South 20th St, Philadelphia PA 19101-8419; DSN 444-2896.

2.3.6.6. Spare parts requisitioning. DPSC-MSCB, 2800 South 20th St, Philadelphia PA 19101-8419; DSN 444-4191.

2.3.6.7. United States Army medical maintenance depots. See paragraph 2.3.2.

2.3.6.8. Radiation protection, industrial hygiene, and other services. Occupational and Environmental Health Directorate, Armstrong Laboratory, Brooks AFB TX 78235-5501; Det 1, AFOEHL, APO AP 96275-5000.

2.4. Defining Maintenance Levels:

2.4.1. Maintenance levels are defined to establish effective maintenance support for medical equipment and ensures the efficacy of the program. Maintenance levels allows for assignment and management of maintenance responsibilities and promote effectiveness and economy. There are four maintenance levels: user, organizational, intermediate, and depot.

2.4.1.1. User Maintenance. The equipment operator performs user maintenance, including:

- Proper operation and use of equipment.
- Simple lubrication.
- Daily inspections.
- Cleaning.
- Minor exterior repairs and operational adjustments.
- Reporting equipment malfunctions to a supervisor or medical equipment maintenance activity.

2.4.1.2. Organizational Maintenance . The using organization performs organizational maintenance on its assigned equipment. Organizational maintenance requires trained BMETs and the use of tools and test equipment not available to the equipment operator. A qualified BMET performs or supervises the maintenance. Organizational maintenance includes:

- Inspections.
- Servicing.
- Lubrication.
- Adjustment.
- Repair.
- Calibration.
- Modification.
- Replacement of parts or assemblies and subassemblies.

2.4.1.3. Intermediate Maintenance. A designated maintenance activity (MERC) performs intermediate maintenance for organizations in a geographical region. Intermediate maintenance includes:

- Supporting organizational maintenance activities.
- Performing complex maintenance tasks that call for special skills, tools, or equipment that are not available at the organizational level.
- Performing quality assurance actions to ensure standards of care throughout the region.

2.4.1.4. Depot Maintenance. Specialized activities perform depot maintenance to aid organizational and intermediate level maintenance activities. Army depots and contract maintenance provide depot-level maintenance for medical facilities. Depot-level maintenance includes:

- Major repairs.
- Overhauls.
- Rebuilds of components and subassemblies.
- Manufacture of parts.

2.5. Supporting USAFR and ANG:

2.5.1. USAFR and ANG medical activities that are authorized and assigned AFSC 4A2X1 personnel must perform organizational maintenance support according to the instructions in this chapter.

2.5.2. Maintenance support to USAFR and nonmobilized ANG medical activities that are not authorized or assigned AFSC 4A2X0 personnel will be provided as follows:

2.5.2.1. Activities located at or near (50 or fewer) an active Air Force medical activity request organizational maintenance support for medical equipment from the closest active Air Force medical unit. A written support agreement is not required for this type of support for USAFR units.

2.5.2.2. Nonmobilized ANG units requiring organizational maintenance support or emergency or essential repairs between scheduled MERC visits may negotiate a written support agreement according to AFI 25-201.

2.5.2.3. The regional MERC provides organizational maintenance support as defined in **Chapter 3** for activities outside the immediate area (over 50 miles) of an active Air Force medical activity. The MERC performs annual PM, calibration, repair, safety, and administrative support.

2.5.2.4. MERC personnel train USAFR and ANG personnel on how to maintain equipment so it can be safely operated during interim periods. In addition, the MERC provides technical assistance on new equipment systems. Written support agreements are not required to receive support from regional MERCs.

2.5.2.5. The designated MERC provides intermediate level maintenance support according to **Chapter 3**.

2.5.2.6. The USAFR and ANG units obtains spare parts required to maintain medical equipment according to local directives except when the parts are normally stocked by the active duty maintenance activity. Parts and supplies that the MERC provides are normally nonreimbursable. Reimburse for medical equipment maintenance support received from other than a regional MERC in according to AFI 25-201.

2.5.3. Provide support to mobilized ANG units according to AFI 25-201.

2.5.4. Organizations may request support from other DoD activities when it is impractical for a USAFR or ANG medical activity to obtain support from either a regional MERC or other Air Force activity for reasons of economy or geographic location. Organizations negotiate support agreements according to DoD 4000.19-R, *Interservice, Interdepartmental, and Interagency Support*, April 15, 1992.

2.5.5. USAFR and ANG units may also use contracts to obtain maintenance for medical equipment.

2.6. Supporting Other DoD and Federal Agencies:

2.6.1. Active duty organizations are encouraged to support Department of the Army, Navy, or other Federal Government agencies such as Indian Health Service, United States Coast Guard, or Veterans Affairs, if such support does not affect Air Force operational missions and is cost effective.

2.6.2. Organizations should prepare support agreements with these agencies according to DoD 4000.19-R.

2.6.3. BMETs should forward one copy of all new or revised agreements for medical equipment support to AFMLO/FOM.

2.7. Supporting Active Duty Aeromedical Evacuation (AE) Units:

2.7.1. The medical equipment maintenance activity performs organizational level maintenance on equipment at aeromedical evacuation (AE) units on their base.

2.7.2. The MERC supporting the base medical equipment maintenance activity provides intermediate maintenance for AE equipment.

2.7.3. The Regional MERC, Scott AFB IL, consults on or provides intermediate maintenance when, because of specialized technology or application, the base medical equipment maintenance activity and the regional MERC cannot maintain AE equipment.

2.7.4. BMETs may request support from the Scott AFB MERC by telephone, message, or letter. If the Scott AFB MERC approves shipment of the equipment, ship the equipment through auditable transportation channels. Include a thorough description of the problem and identification of the organization originating the shipment.

2.7.5. The closest medical equipment maintenance activity performs any corrective maintenance required for equipment being used on a patient mission. The medical equipment maintenance activity documents the work performed on AF Form 1763, **Medical Maintenance Work Order**, and forwards it to: HQ AMC/SGAR, Scott Drive, Scott AFB IL 62225-5319.

2.7.6. The local BMET should also notify Scott AFB by telephone or message of any significant problems encountered while repairing equipment. A local BMET who works on equipment belonging to another organization records it as an unscheduled work order with no index number.

2.8. Supporting Medical Equipment not Owned by the Hospital:

2.8.1. The BMET coordinates with MEMO to identify and appropriately manage all leased, loaned, consigned, or privately owned medical equipment used in Air Force MTFs.

2.8.1.1. Equipment that the hospital does not own must meet the same standards as hospital-owned equipment.

2.8.1.2. BMETs conduct an initial inspection to ensure that the equipment complies with appropriate safety and performance standards before using it for patient care.

2.8.1.3. Equipment that fails inspection must be repaired at the owner's expense and re-inspected by a BMET.

2.8.1.4. Equipment that the hospital doesn't own must be maintained and calibrated as outlined in this instruction and/or the manufacturer's literature.

2.8.1.5. The equipment owner is responsible for equipment maintenance unless otherwise specified under a contracting agreement.

2.8.1.6. Provide maintenance documentation to the NCOIC of the medical equipment maintenance activity once the work is completed.

2.8.2. When leased, loaned, consigned, or privately owned medical equipment is to be used for a prolonged period, you may load it in the MEDLOG system as a maintenance-significant supply item for equipment maintenance tracking and management purposes.

2.9. Supporting War Reserve Materiel (WRM). The medical WRM program prepositions or locates assets with the unit that uses the materiel. This ensures assets are available when and where the medical mission needs them, as reflected in applicable war plans. The materiel must be in a serviceable condition at all times.

2.9.1. BMETs Responsibilities:

2.9.1.1. BMETs assigned to or responsible for WRM assemblages:

- Perform scheduled maintenance, as defined in this AFI, on all medical WRM equipment in storage.
- Follow guidance in AFI 10-403, *Deployment Planning*, and AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments*, to prepare for mobilizing and transporting WRM materials. BMETs assigned to an air transportable hospital (ATH) must also be familiar with TACR 400-10. Request a copy of this regulation through the local publications distribution office (PDO).

2.9.1.2. BMETs:

- Advise AFMLO/FOM what nonauthorized tools and test equipment they need to perform this maintenance.
- Identify environmental conditions that could cause equipment and supplies to deteriorate and develop packaging, storage, and special inspection criteria to ensure the serviceability of all items.
- Identify requirements for host-tenant support agreement with other base support activities (for example, PMEL, communications, and aircraft maintenance functions) for ancillary and other classes of nonmedical equipment that may require periodic maintenance.

2.9.2. Maintaining Prepositioned or Deployable Assemblages:

2.9.2.1. For equipment stored in prepositioned assemblages at the BMET's operating location or in mobility assemblages maintained in a deployable mode, the BMET inspects them immediately upon receipt and thereafter at the frequency listed by medical device code in **Attachment 3** (stored cyclic inspection period).

2.9.2.2. Items with no "stored" maintenance frequency will be visually inspected for signs of deterioration, corrosion, or other damage at least every 24 months. You may conduct these inspections during periodic area walk-throughs, exercises, or inventories, and on a sample basis for items stored in large lots (beds, wheelchairs, and so on). See AFM 67-43, *Quality Control Depot Storage Standards*, for further guidance. If you see any signs of deterioration, inspect all items of that equipment class or in that storage area.

2.9.2.3. Periodically, inspect all WRM assets with device codes N0001 or M0001 using the same inspection regimen described for equipment with no "stored" maintenance frequency. Consider a host-tenant support agreement with other base support activities for nonmedical equipment that may require periodic maintenance.

2.9.2.4. Record any repairs by generating unscheduled work orders. Maintain a letter or work order on file that documents the most recent visual inspection of a sample or area.

2.9.3. Maintaining Nonmobility Assemblages :

2.9.3.1. Equipment in nonmobility assemblages that must be stored for an extended period of time before being set up at its permanent operating location will be retained in its original packing materiel for no longer than five years.

2.9.3.2. After 5 years, unpack, inspect, service, and repack the equipment. This process is completed every 5 years until you notice signs of deterioration. Use the sampling method described above for testing large quantities..

2.9.3.3. Automated scheduled maintenance work orders generated for equipment in nonmobility assemblages is annotated with the year that the equipment is next due for inspection. File the work order and hold it open until you do the inspection.

2.9.4. BMET Responsibilities for Ancillary Equipment:

- Ensure that ancillary support equipment such as power distribution systems, environmental control systems, and other real property similar equipment are operational and in good condition (see AFIs 32-1063 and 25-101).
- Identify to medical logistics that a host-tenant support agreement is needed to ensure that the civil engineering performs organizational maintenance on these items, while in storage and when activated.
- The agreement should also assign the civil engineer responsibility for:
- Prepare the ancillary support items for air shipment (according to AFI 10-403) in the event of deployment.
- Provide periodic training on how to operate and maintain this equipment.

2.9.5. Maintaining Records on WRM Materiel:

2.9.5.1. Create and maintain an individual Equipment Data File (EDF), as described in "Documenting and Tracking Program Compliance" section of this AFI for each medical WRM equipment item.

2.9.5.2. Note that mobility assemblages must maintain their EDFs in a deployable mode and use AF Form 1763 to record each maintenance action conducted during activation.

2.9.5.3. Upon return to storage, transfer all information recorded on these forms either into the MEDLOG system or onto AF Forms 509, **Medical Equipment Maintenance Record**, if no MEDLOG is available.

2.9.5.4. Maintain a separate technical literature file containing information on each type of equipment in the assemblage. Units with a mobility mission maintain this literature in a deployable mode as part of the prescribed load list (PLL).

2.9.6. Managing Spare Parts and Kits:

2.9.6.1. Spare parts and kits that are part of WRM assemblages are carried on the supply records of the supply account.

2.9.6.2. While unactivated and in storage, these parts are WRM stock fund assets and you must manage them manually. Use the manual bench stock procedures described in the "Managing Repair Parts" section of this AFI.

2.9.6.3. Only upon activation of the assemblage can these parts be manage as bench stock in the MEDLOG system.

2.9.6.4. AFMLO/FOM develops WRM spare parts kits. Kit components are based primarily on circuit board subassemblies that can be removed and replaced quickly and standard preventive maintenance items.

2.9.6.5. You may request hard copy listings of spare-part kit components from AFMLO/FOM. Report to AFMLO/FOM when you find you're using quantities of spare parts that are not included in the authorized spare parts kits.

2.9.6.6. Charge repair parts and repairs to WRM equipment not being used in exercises to the WRM stock fund. Use spare part kit components when possible and order replacements immediately. See AFMAN 23-110, volume 5, chapter 15, for funding of WRM repair parts.

2.9.7. Developing WRM Maintenance Operating Instructions (MOI):

2.9.7.1. BMETs assigned to mobility assemblages develop formal written MOIs as applicable.

2.9.7.2. Maintain the MOIs in a deployable mode as part of the PLL.

2.9.7.3. As a minimum, make sure the MOIs cover:

- The BMET's predeployment, deployment, and postdeployment responsibilities.
- Procedures for requesting and processing work orders, repair parts, and spare parts.
- Bench stock management and control procedures for spare parts assigned to the mobility assemblage.
- Procedures for identifying and controlling tools and test equipment assigned to the mobility assemblage.

2.10. Equipping Medical Equipment Maintenance Facilities:

2.10.1. Medical equipment maintenance activities should include an administrative area and a shop area.

2.10.2. The shop area must be adequate in size and equipped with proper tools and test equipment to perform the maintenance mission. Organize it so you can perform all the necessary maintenance tasks in the shop itself.

2.10.3. For planning purposes, use DoD space planning criteria for medical logistics to determine the space requirements for the medical equipment maintenance facility. The regional Health Facilities Office (HFO) is available to provide guidance and can assist in the planning stages.

2.10.4. Facilities Requirements:

2.10.4.1. Sensitive electronics equipment maintenance room: Controlled environment, as dust free as possible, used to calibrate and maintain intricate sensitive equipment such as:

- Electrocardiographs (ECG).
- Audiometers.
- Anesthesia equipment.
- Ventilators.

2.10.4.2. Equipment storage area: Secure area where you can store equipment awaiting parts or maintenance without excessive dust, moisture, and other adverse environmental elements.

2.10.4.3. Spare parts storage area: Secure area where you can properly store repair parts.

2.10.4.4. Administrative area: A well-lit area for administrative functions and customer service.

2.10.4.5. General work area: A well-lit area for technician workbenches, equipment disassembly, and location of drill presses and other large shop equipment.

2.10.5. Utilities:

- Medical Air.
- Oxygen.
- Nitrous oxide and scavenging system (if the facility has analgesia or anesthetic devices).
- Vacuum system.
- 220 volt, 60 amp, AC power (one or two locations, single-phase and three-phase, as required).
- 110 volt duplex outlets.
- Water and wash sink.
- Adequate telephone service.
- Adequate lighting.
- Ventilation and temperature control.
- Emergency eyewash capability.

2.10.6. Accessibility:

2.10.6.1. The medical equipment maintenance facility should be easily accessible to the using activities it supports.

2.10.6.2. Since medical logistics oversees this function, locate it near medical logistics and medical facility management.

2.10.6.3. Locate the shop facility where users can bring equipment items to and from the shop without unnecessary handling and exposure to bad weather.

2.10.7. Tool Requirements:

2.10.7.1. Use properly designed tools and equipment for every job.

2.10.7.2. BMETs must use machine guards where tools pose mechanical hazards.

2.10.7.3. BMETs must only paint in well-ventilated areas approved by bioenvironmental engineering.

2.10.7.4. Keep the maintenance areas clean and orderly:

- Clean machines, equipment, and work surfaces.
- Maintain ample and orderly tool and materiel storage areas.
- Systematically remove and dispose of waste.

2.10.7.5. AFI 32-2001, *Fire Protection Program*, and AFOSH Standards 127-8, *Medical Facilities*, and 127-66, *General Industrial Operations*, give guidance on shop safety.

2.10.7.6. Provide the BMET adequate hand tools and shop equipment to perform assigned functions. The scope of work and the type of equipment maintained determine the amount and type of shop equipment required.

2.10.7.7. Basic repair tools and equipment items may consist of the shop and test equipment listed in table of allowance (TA) 548.

- National Stock Number (NSN) 5180-00-117-3414, Tool Kit, Biomedical Equipment Repairman.
- NSN 5180-00-611-7924, Tool Kit, Medical Equipment, Maintenance and Repair.

2.10.8. Controlling Tool Kits:

2.10.8.1. Maintenance organizations must account for all kits according to AFMAN 23-110, volume 5.

2.10.8.2. Medical materiel activities may replace components of the assemblies on a one-for-one basis as they become unserviceable.

2.10.8.3. The medical materiel activity may authorize the BMET to purchase special purpose hand tools. Such tools become the property of the medical maintenance activity.

2.10.8.4. The 384th HTS/HSTR budgets for and issues National Stock Number (NSN) 5180-00-117-3414, Tool Kit, Biomedical Equipment Repairman, to course graduates.

2.10.8.5. Organizations issue the Biomedical Equipment Repairman tool kit to individuals returning to duty in the AFSC 4A2X0 career field. Obtain the tool kit through GSA.

2.10.8.6. BMETs may use the tool kits for official business only. The kits remain the BMET's possession for the duration of their assignments as AFSC 4A2X0.

2.10.8.7. When a BMET terminates service or is removed from duty as an AFSC 4A2X0, the BMET turns the tool kit in to the medical equipment management office (MEMO).

2.10.8.8. The senior BMET determines the condition of the tool kit. Return tool kits in "like-new" condition to the 384th HTS/HTSR by MEMO. "Like-new" condition indicates:

- The 384th HTS/HTSR issued the kit within 12 months of its turn in.
- The case shows no noticeable wear.
- Individual tools show no damage and minimal wear.
- The kit contains all its tools.

2.10.8.9. Maintenance organizations may keep tool kits that are not in "like new" condition if they are useful to fulfill unique local needs, such as: separate operating location, dental clinics, or other legitimate uses as determined by the clinical engineering officer or senior BMET.

2.10.8.10. Store tool kits kept for any of the purposes mentioned above in the medical maintenance activity and pick them up on MEMO accountable records for the maintenance activity custodial account according to AFMAN 23-110, volume 5.

2.10.8.11. If the tool kit is so worn or damaged that you can't refurbish it cost-effectively, use it to replace tools in usable kits on a one-for-one basis.

2.10.8.12. When you have removed most of the tools from a substandard kit, condition-code the kit accordingly and send it through MEMO for salvage disposition.

2.10.8.13. AFMLO/FOM maintains current component listings of NSNs 5180-00-117-3414 and 5180-00-611-7924 and provides copies of these listings on request.

2.10.8.14. BMETs may recommend changes to these listings or to TA 548 by letter to AFMLO/FOM.

Section 2B—Providing Organizational Maintenance Services

2.11. Prepurchase Evaluation and Selection of Medical Equipment:

2.11.1. BMETs are consulted on each request for medical equipment authorization. BMETs evaluate and document equipment requirements according to AFMAN 23-110, volume 5, chapter 18, attachment B-5 (for investment equipment), and the guidelines in this chapter.

2.11.2. The extent of each evaluation depends on the installation requirements, maintenance requirements, and the cost of the equipment under consideration.

2.11.3. Medical equipment maintenance activities may ask for assistance in evaluating equipment systems from their regional MERC or AFMLO/FOM.

2.11.4. When the DBMS establishes an equipment review and authorization activity (ERAA), the senior BMET, or maintenance officer when assigned, serves as a member to ensure that technical considerations are an integral part of the authorization and procurement process (AFMAN 23-110, volume 5, chapter 18).

2.11.5. MEMO ensures that the purchase request includes two copies of complete operating and service manuals that include at least:

- Operating procedures.
- Listings of repair parts.
- Theory of operation.
- Maintenance instructions.
- Installation instructions (if applicable).
- Illustrated parts breakdown.
- Warranty.
- Schematic drawings (see NFPA 99, paragraph 9-2.1.8).

2.12. Evaluating Complex Equipment Systems. Use the following guidelines for evaluating complex equipment systems:

2.12.1. Clinical Evaluation: BMETs ensure the justification clearly specifies the purpose of the equipment system. Maintenance personnel, in cooperation with the requesting activity, will review the clinical requirements to ensure the equipment requested meets these requirements.

2.12.2. Technical Evaluation. BMETs review the proposed equipment system for compliance with accepted safety and performance standards. The evaluation should ensure the equipment requested is safe, reliable, and maintainable. BMETs should review technical evaluations of similar equipment published in *Health Devices* magazine and other nationally recognized sources that compare products. Evaluators consider and act upon the following:

2.12.2.1. Facility Interface:

- Identify the facility interface requirements of each equipment system under consideration.
- Evaluate the system's utility and floor space needs, waste generation, and unique structural demands.
- Ensure that the receiving department has asked facility management to initiate necessary work requests for base civil engineering (BCE).
- Conduct formal preprocurement surveys for fixed X-ray systems according to paragraph 2.27.
- Perform appropriate preprocurement surveys for acquiring and installing systems such as sterilizers, automated clinical analyzers, dental units, overhead surgical lights, and patient monitoring systems.
- Request the BCE determine whether the building can support the equipment or if modifications to the buildings are necessary.

2.12.2.2. System Interface. BMETs review and identify problems that could arise when interfacing the requested equipment system with existing systems.

2.12.2.3. Maintenance History. BMETs review the maintenance history of similar items using the historical maintenance report (HMR) and equipment data files (EDF).

2.12.2.4. Maintenance Support. The local medical equipment maintenance activity determines if it can maintain the equipment in-house or if contract maintenance is required.

- If the maintenance activity doesn't have the necessary skills or resources in-house, the activity determines what specialized training, space, and test equipment it needs. In some cases contract maintenance services are more readily available, cheaper, or higher quality than those the activity could offer.
- The maintenance activity also makes sure that maintenance literature is adequate and available and requests necessary literature as part of the contract provisions.

2.13. Initial Inspection:

2.13.1. BMETs inspect all newly procured medical equipment before processing the acceptance receipt document and issuing the item to a using activity. BMETs also inspect all nonmedical equipment used in patient locations as defined in AFI 41-203, *Electrical Safety in Medical Treatment Facilities*.

2.13.2. During the initial inspection, the BMET determines if the correct item:

- Was delivered without damage.
- Includes all accessories as ordered.
- Operates according to the manufacturer's specifications.
- Complies with applicable safety and performance standards.

2.13.2.1. The BMET:

- Performs an initial PM inspection, calibration and certification as required.
- Ensures that contractors correctly installs the equipment and verifies proper operation when contractor installation is required.
- Maintains verification of system calibration provided by the manufacturer and reports any discrepancies to the MEMO office.
- Documents identification data, initial leakage current, and measurements of performance and calibration parameters on the work order or on an appropriate calibration form.
- Reviews the relevant contracts and literature for warranty provisions and affixes OF 274, **Equipment Warranty**, to the equipment. Completes the warranty registration data, if appropriate, and forwards it to the manufacturer. **NOTE:** Device tracking requirements of the Safe Medical Device Act (SMDA) may require devices to be registered as part of the warranty process.

2.13.3. To Identify and Log Each New Item, the BMET:

- Affixes a MEMO index number to each maintenance item.
- Marks the equipment according to AFMAN 23-110, volume 5, chapter 18.
- Performs a load work order (LWO) transaction to load historical data or revises QA maintenance record (RVM) transaction to record identification data.
- Verifies that MEDLOG reflects the proper medical device code for the item and corrects the MEDLOG if necessary using an Establish Item Master (EMR) transaction.
- Establishes an EDF in index number sequence as prescribed in paragraph 2.42.
- Places a copy of the contract or purchase order and the initial inspection work order in the EDF.
- Files one copy of the operator's manual and all maintenance manuals.
- Determines spare parts requirements and optimum stockage quantities based on:
 - The number of identical systems.
 - The availability of blanket purchasing agreements (BPA) for repair parts.
 - The level of repair.
 - The criticality of the item.
- Orders the spare parts needed.

Nonmedical electrical equipment may require an initial safety inspection and subsequent scheduled safety inspections, depending on the area of use.

BMETs conduct an initial inspection of leased, loaned, consigned, or privately owned medical equipment as outlined in paragraph 2.13..

2.14. Warranties and Guarantees:

- 2.14.1. Medical equipment maintenance administers the warranty and guarantee program for medical equipment.
- 2.14.2. During the warranty period, enforce the provisions of the warranty whenever possible and care should be taken to prevent actions which would void the warranty.
- 2.14.3. In some cases, especially at overseas locations, it may not be economical to enforce warranties. Look at contract warranty provisions and use your judgment to determine what action to take.
- 2.14.4. AFMAN 23-110, volume 5, chapters 9, 16, and 18, contain additional information on warranties and guarantees.
- 2.14.5. BMETs inform MEMO when they encounter problems getting warranty repairs.
- 2.14.6. Give MEMO details including:
 - Dates, times, and extent of malfunctions.
 - Downtime.
 - Impact on patient care and overall mission.
 - Service personnel involved.
- 2.14.7. Arrange the data in chronological order.
- 2.14.8. MEMO notifies the contracting officer.
 - 2.14.8.1. Contingency hospitals are not required to maintain a warranty and guarantee program on equipment received during the initial assembly process.
 - 2.14.8.2. Handle any equipment received through the assembly process and found to be defective upon initial inspection, or for a period of 1 year thereafter, as a Report of Discrepancy (ROD) through AFMLO/FOCW, according to AFMAN 23-110, volume 5, chapter 9.

2.15. Scheduled Maintenance:

- 2.15.1. A scheduled maintenance program ensures optimum performance, safe operation, minimum downtime, and maximum useful life from each medical equipment system.
- 2.15.2. Scheduled maintenance actions for equipment have two categories: (1) preventive maintenance (PM), and (2) calibration and certification.
- 2.15.3. Scheduled maintenance provides:
 - Regular and systematic servicing.
 - Verification of performance and safety.
 - Detection and replacement of worn or failing components before a serious problem develops.
- 2.15.4. AFMLO/FOM establishes minimum scheduled maintenance requirements based on the manufacturer's recommended frequencies, established industry norms, and user experience. These requirements are found in **Attachment 3** of this instruction.
 - 2.15.4.1. BMETs perform scheduled maintenance at these minimum frequencies but are authorized to increase scheduled frequencies when appropriate.

2.15.4.2. BMETs may not reduce frequencies without the written approval of AFMLO/FOM. Send requests for reduced frequencies to AFMLO/FOM, explaining why a changed frequency schedule won't adversely affect patient care or operator and patient safety.

2.15.5. BMETs use the following references when performing scheduled maintenance actions:

- Manufacturer's literature.
- Work order literals.
- *Health Devices Inspection and Preventive Maintenance System*, published by ECRI.

2.15.6. BMETs should evenly distribute the scheduled maintenance work load. Give appropriate consideration to peak work loads and periods when personnel may be absent due to leaves, holidays, and so on.

2.15.7. In the interests of efficiency, schedule PM and calibration action dates to coincide.

2.16. Preventive Maintenance (PM):

2.16.1. PM is the systematic care, servicing, and inspection of equipment to maintain it in a safe and serviceable condition and to detect and correct minor faults before they develop into major defects.

2.16.2. PM is the joint responsibility of equipment operators and maintenance personnel.

2.16.3. Equipment operators perform user maintenance as defined in paragraph 2.4. and will not attempt repairs beyond those authorized in the operator's manual. Equipment operators' responsibilities are outlined in paragraph 2.2.3.

2.16.4. The BMET performs the following on each regular inspection of equipment if applicable:

- Clean the equipment in areas not normally accessible to the operator. Remove corrosion, dirt, solutions, dust, lint, blood, or deposits. Clean internal components including blowers, filters, fans, and coils.
- Align and tighten all moving components that are not specifically covered in the calibration procedures, such as: doors, drawers, panels, shelves, catches, latches, casters, and hinges.
- Align and tighten all fixed components of equipment including chassis, stops, door pulls, handles, knobs, and motor mounts.
- Lubricate the unit, including motors, gears, bearings, casters, and other moving components. Use only non petroleum-based, nonflammable lubricants on equipment that uses oxygen.
- Inspect and service batteries and battery compartments.
- Adjust electronic and mechanical components as necessary.
- Service all consumable devices such as filters and tubing.
- Evaluate how well the user is maintaining the equipment and tell the user the condition of the equipment.

2.16.5. During PM inspections, the BMET ensures safety by:

- Performing an electrical safety inspection according to AFI 41-203.
- Performing a general safety inspection on all equipment.

2.16.6. When an item of equipment fails to meet the appropriate safety standards, affix an AF Form 979, **Danger Tag**, to the equipment until the problem is corrected.

2.16.6.1. The BMET notifies the department chief and safety officer about the danger tag. See AFOSH Standard 127-45, *Hazardous Energy Control and Mishap Prevention Signs and Tags*, for the proper use of mishap prevention tags.

2.16.6.2. The BMET removes the item from use unless the medical staff determines that the equipment must remain in service for the benefit of a patient.

2.16.6.3. If the equipment must remain in use, make every effort to replace the defective equipment with a similar item that meets the safety standards. If you can't get a replacement, carefully document the decision to keep the defective equipment in service and remove the equipment from service immediately when it is no longer required.

2.16.6.4. Maintain a copy of the written explanation and the associated work order on file for the life of the device.

2.16.7. During scheduled maintenance, BMETs should evaluate the condition of equipment and verify that the repairman's code accurately reflects the current condition of the equipment. This code is important because it is part of the criteria for an item to appear on the 3-year equipment budget requirements list.

2.17. Calibration/Certification:

2.17.1. Calibration/Certification is the measurement and adjustment, if necessary, of various device parameters to ensure its accuracy within prescribed standards.

2.17.2. BMETs document all calibrations on the appropriate form or work sheet and retain the form in the EDF according to paragraph 2.42.

2.17.3. BMETs enter the appropriate action code for a completed calibration into the MEDLOG system or on the work order form.

2.17.4. Individuals performing specific calibration or certification procedures must affix a completed DD Form 2163, **Medical Equipment Verification/Certification**, on the item.

2.17.5. BMETs ensure test instruments and standards used for calibration or certification of medical equipment are calibrated according to TO 33K-1-100-1 or this instruction.

2.17.5.1. Local precision measurement equipment laboratory (PMEL) activities calibrate most test instruments and standards used by BMETs according to paragraph 2.55.

2.17.5.2. Instruments and standards that PMEL cannot calibrate or certify must be periodically calibrated or certified by the manufacturer, or a civilian or other Federal agency, using standards traceable to the National Institute of Standards and Technology.

2.17.6. After any calibration involving electrical components of a system, the BMET must perform a safety inspection according to AFI 41-203 and a general safety inspection before releasing the equipment item.

2.18. Unscheduled Maintenance and Repair:

2.18.1. Unscheduled maintenance involves those actions necessary to restore normal function, safety, performance, and reliability to malfunctioning medical equipment.

2.18.2. BMETs enter all requests for unscheduled maintenance in the MEDLOG system using a produce unscheduled work order (PWO) transaction according to AFM 167-230.

2.18.2.1. The MEDLOG system prints a work order once the BMET enters the PWO.

2.18.2.2. If the on-line system is not working or the facility does not have a MEDLOG system, the BMET must document a manual work order on AF Form 1763 and on an unscheduled work order register according to paragraph 2.39.

2.18.2.3. BMETs assign a priority to each request to help in scheduling and assigning work.

2.18.2.4. While the priority of repair is determined locally, consider the type and importance of the equipment, availability of alternate equipment, and the effect of downtime on the mission.

2.18.2.5. If the repair involves ordering repair parts, the BMET will list all required parts on the work order and enter them in the MEDLOG system using an update work order (UWO) transaction per AFM 167-230, *Medical Logistics System (MEDLOG): I008/AJ Users' Manual*. Additionally, the BMET enters an awaiting parts (AP) transaction in the computer.

2.18.2.6. Sections with manual systems will document the part needed on AF Form 1763 and order it through normal supply channels. BMETs with manual systems will establish a method to monitor the status of work orders awaiting parts.

2.18.2.7. BMETs ensure that the requisition priority is compatible with the procedures in AFMAN 23-110, volume 5, chapter 8, attachment B-1. Parts for medical equipment that is non-operational should be requisitioned on a priority level.

2.18.2.8. BMETs initiate the appropriate request for contract services, if the equipment requires contract, warranty, or depot repair service.

2.18.2.9. After completing any unscheduled maintenance, BMETs complete an operational check of the equipment.

2.18.2.10. BMETs also complete an electrical safety check according to AFI 41-203, if the unscheduled maintenance could have affected any electrical components of the equipment item. Complete this check before releasing the equipment item to an equipment operator.

2.18.2.11. When the repair work is completed, the BMET signs the work order and performs an UWO transaction as per AFM 167-230.

2.18.2.12. For manual systems, the BMET completes the repair action section of AF Form 1763 and processes the form according to paragraph 2.39.

2.18.2.13. The individual accepting the repaired item from medical equipment maintenance activity will sign the work order acknowledging receipt and repair.

2.18.2.14. Fixed Equipment. BMETs who must perform unscheduled maintenance on fixed equipment follow the lockout/tagout policies and procedures in AFOSH Standard 127-24, *Hazardous Energy Control and Mishap Prevention Signs and Tags*.

2.19. Limits on Repair and Overhaul Expenditure:

2.19.1. BMETs use maximum repair allowances (MRA) as a guide for determining whether it is feasible to repair an item rather than replace it when repairs are likely to be expensive.

2.19.2. The MRA applies to each repair or overhaul performed on a medical device. The MRA takes into account life expectancy, current age, down days, and status code of the device.

2.19.3. One-time and cumulative repair limits for medical devices expressed in percentage of current acquisition cost are as follows:

- The one-time MRA must not exceed 65 percent of the current acquisition cost of the item.
- The cumulative cost of repair must not exceed 125 percent of the current replacement cost of the item.

2.19.4. MRAs may be exceeded when an item is needed immediately to save life, prevent suffering, or to meet urgent operational requirements that cannot be satisfied through normal resupply procedures. In such circumstances, BMETs document the DML's approval to exceed the MRAs on the work order.

2.19.5. BMETs may not defer or omit necessary repairs in order to reduce total repair costs to within permissible limits.

2.19.6. EXCEPTIONS:

- Dental handpieces, X-ray tubes, fiberoptic equipment, and other items that can be rebuilt to essentially a new item are exempt from the cumulative MRA. The one-time limit for these exempted items is 75 percent of the current replacement cost of the item regardless of its age.
- When you refurbish an item so that it is virtually like a new system, enter the date and cost of the refurbishment and the original acquisition date in the technicians' notes of the HMR. Change the repairman's code to "S" and the acquisition date to the date you finished refurbishing the item.
- If you use equipment funds to pay for the refurbishment, don't enter the cost in the repair parts cost or contract cost portion of the HMR. You may be able to charge major rebuilds of investment equipment to equipment funds and not to contract service funds.
- BMETs must coordinate with resource management, logistics, and AFMLO/FOM before using investment funds for this purpose.

2.20. Accounting for and Storing Repairable Property:

2.20.1. For each repairable item located within the medical equipment maintenance activity, the BMET:

2.20.1.1. Records the work required and the current status of the repair action on the work order.

2.20.1.2. Tags each item with AFTO Form 350, **Repairable Item Processing Tag**.

- BMETs should fill out the detachable portion of the tag (Part II) and give it to the individual turning the equipment in for service.
- The property custodian files the tag with the records while the item is under repair and surrenders the tag to the medical equipment maintenance activity when the item is returned.

2.20.1.3. Stores each item in a secure designated area in a neat and orderly manner.

2.20.2. Maintains a current log of items given to MEMO for contractor repair. BMETs may use the MEDLOG to generate this log.

2.21. Reporting and Review:

2.21.1. BMETs immediately report to the DML when items reported as broken are critical to the operation of a department, such as specialized imaging devices or automated clinical analyzers that may seriously affect patient care.

2.21.2. At the end of each month, maintenance supervisors should review equipment that is awaiting repair or repair parts for a more than 30 days to determine what's causing the delay and whether someone has taken corrective action.

2.21.3. The DML will develop local procedures for conducting and documenting a monthly review of all work orders outstanding for 60 days or more.

2.21.4. The DML performs this review or appoints, in writing, the clinical engineering officer to perform the review.

2.21.5. Medical logistics activities using MEDLOG can use the monthly work order register (MWOR), Part II, as well as the AP listing, to identify outstanding work orders.

2.21.6. Activities not using MEDLOG must develop local methods to identify outstanding work orders.

2.21.7. The reviewer annotates the report indicating why the repair has been delayed and recommends corrective actions.

2.21.8. Keep the annotated reports in maintenance for 1 year.

2.22. Recommending Equipment for Replacement:

2.22.1. BMETs should recommend that equipment users consider replacing equipment when:

- The HMRs indicate that the cost to repair will exceed the MRA.
- The failure rate is excessive.
- The equipment can't be supported because spare parts or service aren't available.
- Changes in technology provide equipment that will be more economical to operate and maintain, clinically more acceptable, or technologically improved.

2.22.2. BMETs review the 3-year equipment budget requirements list (see AFMAN 23-110, volume 5, chapter 18) and make recommendations based on historical maintenance data and how well the medical equipment maintenance activity can continue to maintain the equipment in a serviceable condition.

2.22.3. In activities that don't have automated equipment historical records, the medical equipment maintenance activity helps equipment custodians and the MEMO officer to prepare a list of equipment that should be replaced in the coming fiscal year.

2.22.4. Equipment custodians and MEMO officers prepare the list annually before budget submission.

2.22.5. The MEMO officer submits the list to the DML.

2.23. Equipment Turn-Ins:

2.23.1. BMETs inspect medical equipment turned in by using activities and determine whether the item is serviceable or unserviceable by reviewing the history of the equipment and the present condition of the item.

2.23.2. BMETs tag the item with DD Form 1574, **Serviceable Tag - Materiel**, DD Form 1577-1, **Unserviceable (Condemned) Tag - Materiel**; or DD Form 1577-2, **Unserviceable (Repairable) Tag - Materiel**.

2.23.3. Use the Federal condition code in AFMAN 23-110, volume 5, chapter 2, attachment 16, to complete the tag. This attachment includes a table that converts repairman's condition codes to Federal codes.

2.23.4. Give the MEMO any excess service literature or operator manuals and the equipment data file.

2.23.5. BMETs review related bench stock parts and turn in unnecessary parts as excess.

2.23.6. BMETs delete MEDLOG component to end-item-relationships before turn-in of maintenance items.

2.23.7. Maintenance activities may cannibalize or disassemble excess or unserviceable medical equipment for serviceable parts or components needed in the foreseeable future before turning the equipment in to the Defense Reutilization and Marketing Office (DRMO).

2.23.8. BMETs must document all repair parts obtained by cannibalization and enter them onto bench stock records using the Spare Parts Gain (SPG) transaction.

2.24. Managing the Equipment Environment and Utilities:

2.24.1. In addition to the requirements for equipment servicing, medical equipment maintenance activity is responsible for the following tests and inspections of the environment in which the equipment is used, and the utilities supplied to the equipment:

2.24.2. BMETs test and calibrate ground detection alarm systems and line isolation monitors and test conductive floors for conductivity.

2.24.2.1. Perform these tests according to NFPA 99, Standard for Health Care Facilities; AFI 41-203; and Health Devices, Inspection and Preventive Maintenance System, published by ECRI.

2.24.2.2. BMETs record test results in duplicate on AF Form 502, **Ground Monitor Test Record**.

2.24.2.3. The approving authority (anesthesiologist, squadron/flight commander, or other officer) signs and keeps the original copy when complete.

2.24.2.4. File the second copy in the medical equipment maintenance activity.

2.24.2.5. The BMET immediately reports any discrepancies to the officer in charge of surgery.

2.24.2.6. Remove medical equipment that doesn't conform to conductivity specifications from flammable anesthetizing locations until you repair it.

2.24.2.7. Report defects in electrical power systems and conductive floors through the facility manager to the base civil engineer, who must repair and correct floor defects and ground fault detection systems or line isolation monitors.

2.24.3. Test ground fault circuit interrupters according to AFI 41-203.

2.24.4. Piped medical gas or vacuum system outlets and their monitoring panels are considered installed real property. The base civil engineer maintains and troubleshoots these systems.

2.24.4.1. Medical equipment maintenance personnel observe, evaluate, and report any malfunctions of these systems through the facility manager to civil engineering for corrective action.

2.24.4.2. Once the civil engineer completes the repairs, medical equipment maintenance personnel inspect the system and verify that it functions according to specifications.

Section 2C—Managing X-ray Systems

2.25. General Guidance:

2.25.1. The BMET plays an essential role in the life cycle management of medical X-ray systems. BMETs assigned to medical activities conduct preventive and organizational maintenance of medical X-ray systems as defined in paragraph **2.29**.

2.25.2. Regional MERCs provide intermediate level maintenance of X-ray systems, including:

- Preprocurement surveys.
- Acceptance inspections.
- Annual calibration or certification.
- Technical assistance and consultation services.

2.25.3. BMETs assigned to MERCs who provide intermediate-level maintenance of X-ray systems should complete courses J3AZR4A270-007, *Advanced X-ray Systems*, and J3AZR4A270-008, *X-ray Preprocurement/ Acceptance Inspection*. BMETs who have not completed these courses must complete on-the-job training at the 5-skill level before performing intermediate maintenance of X-ray systems.

2.26. Certification:

2.26.1. BMETs must ensure that all components of diagnostic medical X-ray systems (which includes dental X-ray systems) are certified by the FDA, Department of Health and Human Services, Center for Devices and Radiological Health (CDRH), according to Title 21, Code of Federal Regulations (CFR), Parts 1000 and 1020.

2.26.2. Facilities will not purchase uncertified systems for use in peacetime health care facilities. Don't acquire uncertified systems for war readiness assemblages without the express approval of AFMLO/FOM. The using command or agency submits requests for approval to AFMLO/FOM in letter format.

2.26.3. BMETs install, certify, and maintain or repair medical X-ray systems according to 21 CFR 1020, manufacturer's instructions, and Air Force policy. Air Force policy is found in AFM 161-38, *Diagnostic X-ray, Therapeutic X-ray, and Gamma-Beam Protection for Energies up to 10 Million Electron Volts*, and this chapter.

2.26.4. Personnel who install, adjust, and test diagnostic X-ray systems or their major components are classified as assemblers under the provisions of 21 CFR 1020. Within the Air Force, personnel holding AFSC 4A250/70/90, military clinical engineers, or civilian equivalents may act as assemblers.

2.26.5. Qualified individuals who install X-ray equipment under contract with the Government or under control of a prime contractor are considered assemblers and are subject to the provisions of 21 CFR 1020.

2.26.6. When an assembler installs one or more certified components of diagnostic X-ray equipment, the assembler must complete FDA Form 2579, **Report of Assembly of a Diagnostic X-ray System**. Obtain these forms from Center for Diseases and Radiological Health (CDRH), Office of Compliance and Surveillance, 1390 Piccard Dr., Rockville MD 20850, (301) 427-1254.

2.26.7. Air Force assemblers installing equipment within the region of applicability (50 states, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, and American Samoa) must provide the original (white copy) and the state agency copy (yellow copy) of FDA Form 2579 to AFMLO/FOM, Frederick MD 21702-5006, within 15 days of the installation.

NOTE:

The reporting requirement in this paragraph is exempt from licensing in accordance with paragraph 2.11.10 of AFI 37-124, The information Collections and Reports (ICR) Management Program; Controlling Internal, Public, and Interagency Air Force Information Collections.

2.26.7.1. After review, AFMLO provides the original to the CDRH.

2.26.7.2. Keep the pink copy in the EDF for the X-ray system.

2.26.8. Contractor assemblers installing equipment must provide the original of FDA Form 2579 directly to the CDRH within 15 days of installation and Give the purchaser copy (pink copy) to the hospital to file in the history file in the medical maintenance activity.

2.26.8.1. The medical materiel activity forwards a duplicate copy (carbon or reproduction) of FDA Form 2579 to AFMLO/FOM.

2.26.8.2. The CDRH does not require FDA Form 2579 for installations outside the region of applicability.

2.26.8.3. Medical materiel activities located outside the region of applicability must ensure that the local BMET or contractor prepares FDA Form 2579 to be forwarded to AFMLO/FOM when they install a certified component.

2.26.8.4. When a contractor does not complete the form, the senior member of the military acceptance team completes it, signs it, and annotates it with the name of the company responsible for the installation.

2.26.9. The activity retains a copy of FDA Form 2579 until all components listed on it have been relocated, transferred to another facility, or permanently removed from service.

2.26.10. Assemblers who reinstall certified component systems when the systems are relocated or transferred, or who replace or add certified components to an existing system, must provide AFMLO/FOM with FDA Forms 2579 as prescribed in paragraph 2.26.

2.27. Procuring X-ray Systems:

2.27.1. Overview:

2.27.1.1. Procurement of a stationary X-ray system is a long, complex process consisting of:

- Identification of need.
- Preprocurement evaluation.
- Approval.
- Contract award.
- Delivery and installation.
- Acceptance.
- Warranty.

2.27.1.2. Under normal circumstances, initiate plans to replace an X-ray system 2 years before you'll actually need the system. Two years is adequate time for budgeting and programming of major room modifications (electrical distribution system, structural modifications, and other utilities as required).

2.27.1.3. Develop a way of monitoring the progress of the procurement, installation, acceptance, and subsequent use of the item.

2.27.1.4. Designate a specific individual as the organization's project officer. If you have to change the project officer, notify DPSC-MX, AFMLO/FOM, and the responsible MERC.

2.27.2. Identifying Needs:

2.27.2.1. The medical equipment maintenance personnel or the department of radiology identify the need to replace an existing stationary diagnostic X-ray system.

2.27.2.2. As soon as the need is identified, convene a joint conference to discuss the existing system and the proposed replacement system. At a minimum, representatives from medical materiel, medical equipment maintenance, radiology, resource management, facility management and the base radiation protection officer should attend this review and planning meeting.

2.27.2.3. The regional MERC may attend depending upon the experience of assigned personnel, the sophistication of the proposed system, and the complexity of the proposed facility modifications.

2.27.2.4. Before the meeting, medical equipment maintenance should get copies of the current DPSC customer ordering list (COL), AFMLO guidance document 79-6, and the HMR with all associated supporting files.

2.27.2.5. Before this meeting, contact several X-ray manufacturers and ask for brochures and product data on systems that meet the basic clinical requirements. Be sure to tell X-ray distributors and manufacturers that the Air Force procures systems on a centralized contract through DPSC and that the base is not authorized to make any obligations for procurement of services or equipment.

2.27.2.6. The purpose of the first meeting is to formally review the clinical adequacy of the existing system and, if the system is inadequate or nearing obsolescence, to determine the clinical capability of the proposed new system using the DPSC COL.

2.27.2.7. During the meeting, consider:

- Age, reliability, maintainability, and history-to-date expenditures of man-hours and repair costs of the present system.
- Certification status of the present system.
- Projected increases in the work load.
- Obsolescence of the current system.
- Need for additional clinical capabilities.

2.27.2.8. Develop a list of the system requirements, including all required options, in the format of the most recent DPSC COL.

2.27.2.9. AFMLO periodically publishes a copy of the most recent COL in the AFMLL. It is also available from DPSC-MX, 2800 S 20th St, Philadelphia PA 19101-8419.

2.27.2.10. Periodically during the acquisition cycle, this steering group reconvenes to revise target dates, assess progress, and respond to outside inquiries. Future meetings may involve BCE and base contracting as well as previous attendees.

2.27.3. Preprocurement Technical Evaluation Surveys:

2.27.3.1. A preprocurement survey must be accomplished before the authorization or procurement of any stationary diagnostic/therapeutic medical X-ray system or a mobile system dedicated for use in a specific room (i.e., mammography). This requirement also applies to the relocation of any in-use stationary X-ray system.

2.27.3.2. AFMLO/FOM gives final approval of preprocurement surveys for new systems.

2.27.3.3. The chief of the appropriate MERC approves surveys for in-use systems being relocated.

2.27.3.4. Locally assigned maintenance personnel or the regional MERC conducts surveys following AFMLO Guidance Document 79-6, *Procedures for Performance and Documentation of X-ray Pre-Procurement Surveys*.

2.27.3.5. Individuals with AFSC 4A271/4A291, military clinical engineers, or civilian equivalent may conduct these surveys. These individuals should have attended the 384th HTS/HTSR course J3AZR4A270-008, *X-ray Procurement and Acceptance Inspection Procedures*.

2.27.3.6. If the MERC's help is not required, the MERC will provide the requesting activity with the current AFMLO Guidance Document 79-6. If the MERC's help is required, the MERC will schedule a technical support visit to the requesting activity to perform the survey.

2.27.4. Approval Process :

2.27.4.1. The MERC forwards the completed survey to the DML of the requesting activity for coordination and acceptance of the survey results.

2.27.4.2. If the survey is for relocating an existing system, the DML may initiate the relocation within MAJCOM guidelines. If the survey is for acquiring a new system, the survey results and recommendations are to be reviewed locally and any differences resolved.

2.27.4.3. Send completed surveys for approval according to paragraph **2.27.4.6**.

2.27.4.4. If local personnel performed the survey, they forward the completed survey to their supporting MERC for review and approval.

2.27.4.5. After review, the MERC returns the survey to the originating activity for further processing as outlined in paragraphs **2.27.4.12.** through **2.27.4.19.**

2.27.4.6. The DML forwards the preprocurement technical survey, a copy of the MERC approval letter if applicable, civil engineering cost estimates for the proposed facility modifications, and a cover letter requesting review and approval to AFMLO/FOM.

2.27.4.7. Approved surveys are required for all allowance and authorization requests (AF Form 601, **Equipment Action Requests**) and for future procurement action.

2.27.4.8. Upon approval of the preprocurement survey, AFMLO assigns an AFMLO project number to the project and returns the survey to the facility.

2.27.4.9. The DML will forward a copy of the survey, the AFMLO approval letter, the COL, civil engineering cost estimates, and any other supporting documents to DPSC-MX to generate a technical data package (TDP) and to get a DPSC project number.

2.27.4.10. Use the DPSC-MX project number, along with the AFMLO project number, on all correspondence concerning the project.

2.27.4.11. The TDP provides the requesting activity with cost figures, complete system descriptions, utility requirements, training availability, and respective manufacturer service centers for all X-ray systems currently available that meet the customers' requirements.

2.27.4.12. The DML reviews the TDP with radiology and medical equipment maintenance to determine which of the listed systems are acceptable.

2.27.4.13. If systems offered with low bid are not considered acceptable for clinical or technical reasons, the DML selects an acceptable brand name and sends a letter justifying the more expensive model to DPSC-MX for consideration.

2.27.4.14. The radiologist in charge signs the justification letter and specifies the exact clinical capabilities that are required and the impact on the mission if the facility doesn't have these capabilities.

2.27.4.15. Prepare AF Form 601 and submit it according to AFMAN 23-110, volume 5, chapter 18. Send along with AF Form 601:

- Preprocurement technical survey.
- MERC review letters.
- AFMLO/FOM approval letter.
- Completed checklist from attachment B-5, chapter 18.
- DPSC-MX technical data package.
- Sole or limited source justification, if required.
- Civil engineering cost estimates.

2.27.4.16. When AF Form 601 is approved and funded, the DML submits a purchase request by letter according to the instructions in the current DPSC COL.

2.27.4.17. Set a realistic required delivery date on the requisition, consistent with when facility modifications can be completed. Don't store the new system for an extended period as system components may deteriorate and you may have to pay additional installation charges.

2.27.4.18. DPSC-MX may exceed the estimated price by up to 10 percent without prior approval of the requisitioner, unless the purchase request includes a "maximum funds authorized" statement.

2.27.4.19. Send a copy of the requisition cover letter to AFMLO/FOM.

2.27.5. Contract Award:

2.27.5.1. After the contracting officer receives a funded requisition from DPSC-MX, the officer awards the contract for procurement of the required system based on the low bid of qualified contractors or on a sole or limited source basis, if the DML gave sufficient justification.

2.27.5.2. After contract award, DPSC-MX forwards a copy of the delivery order and a letter entitled "Customer and Contractor Responsibilities for Diagnostic X-ray System Procurements" to the requesting activity.

2.27.5.3. This letter defines the responsibilities of the customer and the contractor. Read it carefully to ensure that both parties meet the provisions of the contract.

2.27.5.4. Use form letters attached to the Customer and Contractor Responsibilities letter to notify DPSC-MX in any of these cases:

- Requesting change of delivery or installation dates.
- Equipment is received.
- Installation is complete.
- Quarterly reports of any repairs made under warranty.

2.27.5.5. Send a copy of the quarterly performance report to AFMLO/FOM (negative replies are required).

2.27.5.6. Maintain a copy of the delivery order in medical logistics and tell the project officer about the contractual provisions.

2.27.5.7. Within 30 days of the contract award, the contractor must:

- Visit the site of installation.
- Survey power and other utility requirements.
- Provide the DML at the hospital with complete layout plans, room preparation drawings, and instructions.

2.27.5.8. Facility management, civil engineering, medical maintenance, and radiology personnel review the contractor's drawing and plans to ensure that:

- The equipment layout will meet the clinical requirements.
- The contractor isn't requesting unnecessary construction or room renovation.
- Existing conduits, cable raceways, and other fixtures are used as much as possible.

2.27.5.9. The project officer coordinates closely with BCE to ensure that BCE can provide all utilities and modifications by the contract delivery date.

2.27.5.10. Report to DPSC-MX by message if the contractor fails to provide the required data. Send a copy of the message to AFMLO/FOM.

2.27.5.11. Unless otherwise specified in the delivery order, the contractor is not responsible for installing:

- Ceiling support for overhead tube suspension.
- Carpentry work.
- Plumbing.
- Conduit.
- Wire in conduit junction boxes.
- Line switches.
- Fuses.

2.27.5.12. The project officer and the DML closely monitor the execution of commercial contracts and BCE work orders for modifying and preparing rooms to receive permanently installed X-ray systems.

2.27.5.13. The DML documents any significant deviations from established deadlines and technical specifications and informs the MAJCOM, AFMLO/FOM, and DPSC-MX of these deviations. Get help from the MERC or one of these organizations, if necessary.

2.27.6. Installation:

2.27.6.1. The manufacturer supplying the equipment usually installs stationary X-ray systems under contract within the CONUS. Activities located in areas where this type of installation is not feasible must use local or area MERCs to install X-ray systems.

2.27.6.2. In either case, encourage local maintenance personnel to participate in installing the system as long as their participation does not void any of the provisions of the installation contract.

2.27.7. X-ray Systems Acceptance Inspections :

2.27.7.1. Conduct acceptance inspections on all newly installed diagnostic medical X-ray systems purchased by DPSC.

2.27.7.2. DPSC-MX provides the inspection protocol and report format.

2.27.7.3. Regional MERCs perform acceptance inspections on all stationary medical X-ray systems and forward the original of the acceptance inspection report to DPSC-MX. Send a copy of the report and all attachments to AFMLO/FOM, the organization receiving the system, and the inspecting activity.

2.27.7.4. Local BMETs may perform acceptance inspections on mobile medical X-ray systems. The inspecting activity and the organization receiving the system should keep the acceptance inspection report until the system has been disposed of.

2.27.7.5. Send to AFMLO/FOM one copy each of AF Form 2025, **Post-Calibration Radiation Inspection Record - Radiographic**, and AF Form 2026, **Post-Calibration Radiation Inspection Record - Fluoroscopic**, for inspections performed on medical diagnostic X-ray systems during an initial DPSC X-ray acceptance inspection. Make sure the forms are entirely legible and clearly

note all items that are not applicable. Mail the forms together with applicable copies of FDA Form 2579 to AFMLO/FOM within 30 days of completing the acceptance inspection.

2.27.7.6. During an acceptance inspection, inspect all items that can be inspected. During reinspections, only inspect areas that failed the initial inspections and areas that might have been affected by a corrective action on failed areas.

2.27.7.7. If you couldn't perform the radiation inspection because equipment malfunctions terminated the original inspection, provide the radiation inspection results obtained during the reinspection as part of the reinspection report.

2.27.7.8. The acceptance inspection report on any X-ray system requiring a reinspection must include an itemized list of all costs (salary, per diem, travel, and other miscellaneous costs) incurred during the reinspection. AFMLO Guidance Document 80-8, *Reimbursements for X-ray Reinspections*, tells you how to get reimbursed for these costs.

2.27.7.9. BMETs conduct acceptance inspections of dental X-ray systems to ensure that the installed equipment meets all manufacturer requirements.

2.27.8. Warranty Period for X-Ray Systems:

2.27.8.1. X-ray equipment warranties usually provide for various services during the first year of use. The warranty period should allow sufficient time for local activities to train 4A2X1 personnel to maintain and repair the new system. Get current information on training programs from AFMLO/FOM, DSN 343-7487.

2.27.8.2. Channel requests for warranty repair through the medical maintenance activity.

2.27.8.3. BMETs maintain copies of all service reports in the master record EDF.

2.27.8.4. The facility that received the equipment notifies DPSC-MX by message or telephone if it has problems obtaining repairs under warranty.

2.28. Radiation Protection Surveys:

2.28.1. Make sure a properly qualified health or radiological physicist conducts a complete radiation protection survey when new or modified X-ray facilities open for routine use.

2.28.2. Include these surveys as part of the facility construction or modification contract or request them through the BEE.

2.28.3. When facilities are replacing equipment with similar capabilities and workloads, have the BEE evaluate shielding effectiveness and approves interim use of the facility until the survey is completed.

2.28.4. In all cases, complete the survey within 90 calendar days of the acceptance date.

2.28.5. If you note any discrepancies in the radiation survey that might be attributable to the manufacturer, refer them immediately to the manufacturer through the contracting agency.

2.28.6. Note that radiation protection surveys of devices that produce ionizing radiation may only be conducted by qualified personnel from AL/OEBSC, Brooks Air Force Base, TX; Detachment 3-AL, Kadena Air Base, Japan; or by an assigned health physicist as prescribed in AFM 161-38.

2.28.7. Notify the base radiation protection officer when you replace any major component of an X-ray system, so the officer can determine whether a radiation protection survey is needed.

2.28.8. File copies of the report in the maintenance activity, in the workplace case folder maintained by Bioenvironmental Engineering Services (BES), and with the radiology department.

2.28.9. Have the preparer furnish additional copies of such reports to the MAJCOM, the area MERC, and AFMLO/FOM.

2.28.10. Require medical equipment maintenance activities document all steps taken to resolve the discrepancies noted on radiation protection surveys.

2.28.11. Require medical equipment maintenance activities forward a letter to the area MERC, MAJCOM, and AFMLO/FOM indicating that they took corrective action within 45 days of receiving the report. The hospital or clinic administrator signs the letter and includes information from radiology, the bioenvironmental engineer, and medical equipment maintenance, as appropriate.

2.28.12. Keep a copy of all such letters on file with the report.

2.29. Maintaining X-Ray Systems. The organizational maintenance activity and the MERC are jointly responsible for scheduled and unscheduled maintenance of X-ray systems.

2.29.1. Maintenance Responsibilities and Procedures:

2.29.1.1. Have local base medical equipment maintenance activities perform all required PMs including testing, verifying, and adjusting:

- Collimators.
- Spot film devices.
- Beam limiting devices.
- Source-to-image distance (SID) indicators.

2.29.1.2. Make sure they also perform all mechanical inspections, including inspection of all counterweight cables and locks.

2.29.1.3. Maintain records and films supporting these inspections on file for review by the MERC team.

2.29.1.4. Note that the organizational maintenance activity must report equipment malfunctions that affect scheduled calibrations to the MERC superintendent before scheduled MERC visits.

2.29.1.5. Note that the local BMET and the MERC team will jointly correct problems discovered during annual calibrations. If they can't repair the equipment immediately because they don't have the correct parts, the local base maintenance activity performs the repairs.

2.29.1.6. Remember the MERC will document problems of this type in the technical trip report and will also include comments on the adequacy of the local maintenance X-ray calibration and PM program, when appropriate.

2.29.2. Calibration Responsibilities and Procedures:

2.29.2.1. The area MERC oversees the annual calibration of diagnostic X-ray systems.

2.29.2.2. The MERC will document the calibration on DD Form 2164, **X-ray Verification/Certification Worksheet**, and the accompanying post-calibration radiation inspection (PCRI) on AF Form 2025 or AF Form 2026.

2.29.2.3. MERC chiefs may delegate, in writing, limited calibration/certification responsibility to base level maintenance activities, as long as they have the necessary test equipment and trained personnel. Delegations will not exceed a 1-year period.

2.29.2.4. The MERC will annually assesses how well each base medical maintenance activity can comply with current calibration/certification standards before renewing the delegation of this duty.

2.29.2.5. Calibration/certification of diagnostic X-ray systems, except during initial warranty periods, will not be accomplished by commercial contract without the concurrence of the area MERC. When someone other than the MERC (such as the local BMET or a contractor) performs the calibration, the MERC will conduct an annual PCRI.

2.29.2.6. Report unsatisfactory performance of a system under commercial contract to the appropriate contracting officer.

2.29.2.7. If the base medical maintenance activity performed the calibration/certification, the MERC will help the base reaccomplish the calibration.

2.29.2.8. AFMLO/FOM will provide guidance on diagnostic X-ray calibration/certification and PCRI procedures upon request.

2.29.2.9. During the annual calibration visit, the MERC evaluates the local activity's high voltage bleeder. If its output is within acceptable limits (obtained by comparing it with the output of the Dynalyzer III or other certifiable source), the MERC recertifies it using AFTO Form 108, **TMDE Certification Label**.

2.29.2.10. Local maintenance activities forward high-voltage bleeders that fail the test to the manufacturer for field calibration service.

2.29.2.11. MERCs forward copies of all X-ray calibration/PCRI results to the maintenance or logistics section, for filing in the EDF, and to the BEE and AFOEHL/RZ.

2.29.2.12. A complete file on calibration consists of the original installation calibration results and copies of the two latest calibration or PCRI records.

2.29.2.13. In all instances, the facility will maintain a baseline calibration record or the original acceptance inspection on file for the life of the system.

2.29.2.14. MERCs compare results of follow-on calibration to the baseline and previous calibration or PCRI records and take corrective action on excessive differences are noted.

2.29.3. Serial Number Control of X-ray Systems:

2.29.3.1. Provisions of 21 CFR 1020 require that major components of X-ray systems be controlled by line item. To comply with this regulation, Air Force activities establish serial number control of the following major components, using procedures in paragraph **2.41.** and AFM 167-230:

- Tube housing assemblies, X-ray controls (including timers, phototimers, automatic brightness stabilizers, and similar devices separate from the main timer), X-ray high voltage

generators, tables, cradles, film changers, vertical cassette holders mounted in a fixed location and cassette holders with front panels, and beam limiting devices manufactured after 1 August 1974.

- Fluoroscopic imaging assemblies manufactured after 1 August 1974 and before 26 April 1977 (the image assembly includes the image intensifier and spot film device).
- Spot film devices and image intensifiers manufactured after 26 April 1977.
- Cephalometric devices manufactured after 25 February 1978.
- Image receptor support devices for mammographic X-ray systems manufactured after 5 December 1978.
- Other components such as video monitors, video camera recorders, film cameras and cine cameras.

2.29.4. Managing X-Ray Tube Heads:

2.29.4.1. Tobyhanna Army Depot, PA, and Defense Distribution Region West, Tracy CA, maintain a stock of loaner X-ray tube heads for most models and manufacturers of X-ray systems. Upon request (by telephone or message), the medical equipment repair activities at Tobyhanna Army Depot and Defense Distribution Region West will dispatch any available tube head to satisfy urgent base requirements.

2.29.4.2. The depots can usually repair and return unserviceable X-ray tube head assemblies to original condition for less than it would cost to procure a replacement assembly. See paragraph 2.54. for procedures on sending X-ray tube heads to the depots.

2.29.4.3. Regional MERCs may maintain a limited number of loaner tube heads that are commonly used in their region. Regional MERCs maintain location records of all spare X-ray tube heads in their region indicating whether the unit is in use, in transit, or a spare. MERCs may use AF Form 509 to keep these records.

2.29.4.3.1. Base activities may not maintain spare X-ray tube heads without the written approval of the regional MERC.

2.29.4.4. Local medical activities must report excess serviceable and unserviceable X-ray tube unit assemblies to the regional MERC.

2.29.4.4.1. If the regional MERC doesn't need them, report the item to the appropriate Army repair depot indicating the model number, manufacturer, serial number, estimated usage, and overall condition.

2.29.4.4.2. If the Army depot needs the item, forward it on a nonreimbursable basis for inclusion in the Air Force stock available for loan.

2.29.4.4.3. If no one has a valid requirement for the item, excess it according to AFMAN 23-110, volume 5, chapter 20.

Section 2D—Performing Quality Assurance

2.30. Modifying Medical Equipment:

2.30.1. A modification is a change in the design or assembly of an item to meet revised specifications, correct defects, or improve performance.

2.30.2. HQ USAF/SG may authorize modification of medical devices to:

- Increase the equipment's effectiveness.
- Correct design deficiencies.
- Increase the equipment's useful life.
- Provide greater safety for patients and operating personnel.
- Reduce excessive maintenance.

2.30.3. BMETs will not modify or alter medical devices in a way that would change the item's essential characteristics or substantially compromise its compliance with manufacturer's specifications and Federal standards, unless authorized or directed by the HQ USAF/SG.

2.30.4. Directed modifications are normally published in the Clinical Engineering and Technical Services Section of the AFMLL.

2.30.5. AFMLO/FOM issues hazard alert messages if equipment requires emergency modifications.

2.30.6. BMETs accomplish all directed modifications within prescribed time limits and in strict accordance with the modification instructions.

2.30.7. At the discretion of the DBMS, BMETs may make minor equipment modifications:

- To meet local operating needs.
- When such modifications do not change the essential characteristics, manufacturers' specifications, or Federal standard compliance of the item.

2.30.8. BMETs may not do any modifications that might introduce a potential electrical or other safety hazard, even if the modification is considered minor.

2.30.9. If an item is satisfactorily serving the purpose for which it was designed but use or testing show that its design, performance, maintenance upkeep, or safety features can be improved, the BMET may recommend the item for modification.

2.30.9.1. The medical staff evaluates the proposed modifications before they are submitted to ensure that the proposed modification is compatible with operating requirements, equipment construction. Forward only those modifications that show clear promise of improving an item improvement for further review and evaluation.

2.30.9.2. BMETs prepare recommendations in letter form and forward them through the MAJCOM to AFMLO/FOM.

2.30.9.3. Before initiating any type of modification, BMETs report items of medical equipment that are or may be unsatisfactory as medical materiel complaints according to paragraph 2.33. and AFMAN 23-110, volume 5, chapter 19.

2.31. Documenting Modifications:

2.31.1. BMETs document all modifications in the MEDLOG, using a work order with action code MP. BMETs keep all modification work orders in the EDF throughout the life of the item.

2.31.2. BMETs document modifications authorized by the HQ USAF/SG by annotating the technicians' notes section of the HMR. Write the letters MP (Modification Performed), followed by the issue number of the AFMLL in which the modification was published (for example, MP 3-94). Document modifications at nonautomated accounts by annotating AF Form 509.

2.31.3. BMETs document changes on schematics and circuit explanations for the item receiving the modification.

2.31.4. BMETs document minor modifications performed at the discretion of the DBMS by annotating AF Form 509 or the technicians' notes section of the HMR with the letters MP followed by the work order number; for example, MP 50780007.

2.32. Medical Device Recalls and Hazard Alerts:

2.32.1. AFMLO routinely publishes FDA and manufacturers' recalls of medical devices in the Clinical Engineering and Technical Services Section of the AFMLL. FDA recalls consist of three classes:

2.32.1.1. Class I: A situation with a reasonable probability that the use of, or exposure to, a product will cause serious, adverse health consequences or death. Suspend these items from use until the item has been repaired or modified to correct the described problem.

2.32.1.2. Class II: A situation in which the use of, or exposure to, a product may cause temporary or medically reversible adverse health consequences or where the probability of serious adverse health consequences is remote. Class II recalls are not generally serious enough to warrant suspension of the item until corrected. Unless the AFMLL article specifies otherwise, you need not suspend the use of equipment under class II recall.

2.32.1.3. Class III: A situation in which the use of, or exposure to, a product is not likely to cause adverse health consequences. Class III recalls are not generally considered serious enough to warrant suspension of the item until corrected. Unless the AFMLL article specifies otherwise, you need not suspend the use of equipment under class III recall.

2.32.2. BMETs treat and document recalls published in the AFMLL as modifications according to paragraph 2.31. After completing the recall, BMETs document the HMR with the issue number of the AFMLL in which the recall notice appeared.

2.32.3. BMETs also treat and document medical equipment alerts published in the ECRI Health Device Alerts as modifications according to paragraph 2.31. They will inform medical supply of published recalls involving supply items.

2.32.4. When a manufacturer directly notifies an activity of a recall, the activity takes immediate action to implement the corrective procedures.

2.32.5. The BMET should notify or fax AFMLO/FOM any manufacturer's recall that has not been previously published in the AFMLL.

2.32.6. BMETs inform the MTF Safety Committee of all recalls that affect equipment that is in the medical treatment facility inventory and explain what they have done to ensure that the equipment is safe for patient use.

2.33. Medical Equipment Defect Reporting:

2.33.1. The safety of medical equipment depends not only on its design and manufacture but also on hospital utilities, expendable supply items, and users. These complex influences can make it hard to detect equipment-related problems that bear on patient or staff safety. BMETs must follow these guidelines to ensure that medical staff at appropriate levels evaluate all potentially significant hazards.

2.33.2. BMETs report the equipment defects as a Type I or III complaint, using Standard Form (SF) 380, **Reporting and Processing Medical Materiel Complaint/Quality Improvement Report**, according to the procedures in AFMAN 23-110, volume 5, chapter 19.

NOTE:

The reporting requirement in this paragraph is exempt from licensing in accordance with paragraph 2.10.8 of AFI 37-124.

2.33.2.1. BMETs report incidents that suggest that medical equipment may have contributed to the serious injury, serious illness, or death of a patient.

2.33.2.2. Report defects that are clearly capable of causing injury or death to patients or staff as Type I complaints. Send a completed SF 380 to DPSC-QA. Send an additional copy to AFMLO and include a copy of the incident report when an injury is involved.

2.33.2.3. Examples of Type I Defects:

- Excessive operating temperatures at exposed surfaces.
- Inadequate thermostatic controls or safety backup thermostats.
- Insecure mounting or insufficient counterbalancing of heavy items.
- Dangerously exposed moving parts.
- Electrical shock hazards.
- Explosion hazards.

BMETs report items that perform unsatisfactorily due to malfunction, design deficiency, defects, or performance as a Type III complaint. Examples:

- Inadequate or inaccurate labeling.
- Inadequate or inaccurate instructions for operation or maintenance.
- Noncompliance with applicable Air Force or DoD purchase descriptions and specification, applicable Federal standards, or the manufacturer's own specifications.
- Unacceptable rapid deterioration or frequent breakdowns under conditions of normal use.
- Inaccurate or unreliable diagnostic data outputs.
- Inaccurate or unreliable control of the duration or quantity of energy applied to a patient for diagnostic or therapeutic purposes.

2.33.3. BMETs should *not* report the following types of equipment-related problems as medical materiel complaints. Instead, BMETs should ensure that the section submits an Incident Report to Risk Management. Report:

- Unfavorable interaction or connection between equipment and hospital utilities such as electrical power, compressed gas, medical gases, and steam, which result in performance or safety problems.

- Observed operator practices that substantially reduce the life expectancy, safety, or performance of medical equipment.
- Problems in getting timely and effective responses from manufacturers' service representatives.

2.33.4. BMETs coordinate complaints involving aeromedical equipment with the Scott AFB MERC by telephone.

2.34. Initiating an Incident Investigation:

2.34.1. An "incident" is an event in which equipment or a procedure has caused or may have caused injury to a patient, staff member, or visitor.

2.34.2. Personnel must properly preserve medical equipment items that may have been involved in a device-related incident.

2.34.3. The clinical engineering officer or senior BMET will conduct a formal investigation in conjunction with the medical facility safety officer, risk manager, or others as appropriate.

2.34.4. Summarize this investigation on AF Form 765, **Hospital Incident Statement**, and send the form to the risk manager.

2.34.5. The investigation must include:

- Impounding the equipment.
- Noting the position of all knobs and dials on the equipment.
- Noting any missing components or parts.
- Noting the overall condition of the equipment.
- Interviewing involved personnel.
- Identifying exact items of consumable supplies by lot number, date of manufacture, or other means, perhaps by getting the original packaging out of the trash.
- Reviewing maintenance history and test procedures.

2.34.6. The clinical engineer or senior BMET will examine the three basic interfaces (operator-device, patient-device, and consumable supply-device) to determine the cause of an incident.

2.34.7. Regarding the Operator and Device Interface:

- Did the operator use the device appropriately? Review operating instructions to verify.
- Were control settings appropriate for the intended diagnostic or therapeutic procedure?
- When and where was the operator training accomplished and documented?
- Had personnel noticed any facility utility problems (electrical, medical gas, water, suction, or HVAC) before, during, or after the procedure?

2.34.8. Regarding the Patient and Device Interface:

- How did the device respond when connected to the patient?
- Was the patient on drug therapy or were there any related sensitivities?

2.34.9. Regarding the Consumable Supply and Device Interface: (Consumable supplies include leads, electrodes, plastic tubing, filters, reservoirs, and breathing circuits.)

- Were the items designed for use with the affected device?
- Were items properly connected to the device and the patient?
- Were items reusable or intended for one-time use?

2.34.10. BMETs develop local procedures to clearly delineate the responsibilities for conducting an incident investigation involving medical equipment. Outline the responsibilities for these investigations in the MTF's QA/RM plan as addressed by AFI 44-119, *Quality Assurance and Risk Management in the Air Force Medical Service*.

2.34.11. BMETs should help the QA coordinator or Risk Manager to educate equipment custodians and operators of their responsibilities in equipment-related incident investigations.

2.34.12. The regional MERC and the Clinical Engineering Branch, AFMLO, are available for advice on how to set up these programs and can assistance in actual incident investigations.

2.35. Training Equipment Operators:

2.35.1. Operator error and improper use of equipment can lead to the injury or death of a patient or staff member. To prevent such occurrences in Air Force medical treatment facilities, medical equipment maintenance personnel will help departments train operators on patient-related equipment as part of departmental in-service training.

2.35.2. BMETs should offer training when a new equipment systems is first issued and periodically as requested.

2.35.3. BMETs should place special emphasis on how to use emergency resuscitation equipment and equipment located in areas such as the emergency room, surgery, and intensive care unit where life saving and life support systems are in common use.

2.35.4. Maintain documentation of this training within the section receiving the in-service training as well as within the BMET activity.

2.35.5. Operator training should, at a minimum, include:

- Proper operation including features unique to the particular manufacturer or model of equipment.
- Safety precautions for operators and patients.
- User PM, cleanliness, and operational verification procedures.
- Recognition and correction of common operational problems.
- Recognition of defective equipment and potential hazards.
- Proper reporting procedures for maintenance requests.

2.35.6. Frequent requests for repair service because of operator error or inadequate user maintenance may indicate that the operator needs further training. BMETs who see such problems should document the discrepancies, notify their supervisors, and offer operator training to the section supervisor and equipment operators.

2.35.7. BMETs, the manufacturer, or medical staff members can provide operator training. BMETs may want to ensure that contracts for new equipment require the manufacturer to provide operator training.

Section 2E—Documenting and Tracking Program Compliance

2.36. Work Order Documentation and Control System:

2.36.1. A work order documentation and control system, when properly used:

- Establishes work priorities.
- Provides a means of scheduling and assigning work.
- Documents maintenance performed and parts used.
- Provides information needed to analyze and manage maintenance activities.
- Validates the local maintenance and safety programs for the purposes of accreditation, risk management, and management inspections.

2.36.2. BMETs will complete a work order to document all initial inspections, PM, calibration, repair, inspection of medical gas systems, in-service training of medical personnel, extensive equipment review projects, and preprocurement technical surveys.

2.36.3. A properly completed work order includes:

- Identification of the equipment item.
- Using activity.
- Nature of the work required.
- Technician performing the work.
- Time spent.
- Spare parts used.
- Summary of the work accomplished.

2.36.4. Work orders are *not* required for time spent on shop administration, spare parts management, on-job-training of maintenance personnel, squadron functions, or other similar activities requiring technicians' time. BMETs may maintain informal documentation of the time spent in these areas in case they need to justify requests for additional staff.

2.37. Medical Logistics System (MEDLOG) Work Order Control System. AFM 167-230 provides instructions on how to use the MEDLOG system. The MEDLOG system provides an automated system for work order control and generates the following three types of work orders.

2.37.1. Initial Inspection Work Orders: The MEDLOG system produces initial work orders for receipts or gains of maintenance items. The BMET will follow the procedures in paragraph 2.13. upon receiving initial inspection work orders on medical items.

2.37.2. Scheduled Work Orders: BMETs can print scheduled work orders on-line or during end-of-day processing by processing a print scheduled work order (SWO) transaction. The MEDLOG system also automatically prints work orders not requested during the current month during the end-of-month processing. BMETs complete work orders that appear in the New/Outstanding Section of the Monthly Work Order Report as "inspection overdue" or "incomplete work order" as much as possible before completing the current month's scheduled work orders.

2.37.3. Unscheduled Work Orders: BMETs generate a work order for unscheduled maintenance using a PWO transaction according to AFM 167-230, paragraph 21.10.2.

2.37.3.1. If the item has no index number, the BMET should enter the index number "99999" to create a work order. The MEDLOG system then produces a work order on-line.

2.37.3.2. BMETs should process unscheduled work orders against the individual component. This work order identifies specific components that may be causing excessive system downtime. If the components are linked to an end item, the MEDLOG system automatically transfers the work load and cost data for each of the individual components of a system to the end item when the UWO transaction is processed. The equipment status code then accurately reflects the condition of the system.

2.37.4. Work Order Completion: After completing a work order, BMETs update the maintenance data in the HMR by entering a UWO transaction in the MEDLOG computer. The technician follows AFM 167-230, figure 21-3, to enter the necessary information on the work order.

2.37.5. Cancellation of Work Orders: BMETs may cancel work orders by processing a UWO transaction with work order action code CW and entering the technician code. However, the MEDLOG system generates a new work order in the next monthly cycle if a scheduled PM, calibration, or safety inspection is overdue. BMETs should only cancel scheduled work orders because of unusual circumstances that are fully documented. The BMET should normally leave the work order incomplete and complete those with the oldest Julian dates first.

2.38. MEDLOG Work Order Computer Products. The MEDLOG system generates these computer products that help in managing work orders:

2.38.1. *The Daily Work Order Register* is the primary document used to control work production and quality control of work order processing. It consists of two sections: New/Outstanding and Completed.

2.38.1.1. The first New/Outstanding Section of the month lists all outstanding work orders including the new scheduled work orders generated during the end-of-month processing. Subsequent reports show work orders generated that day.

2.38.1.2. BMETs should use the New/Outstanding Section to manage and control work assignments.

2.38.1.3. The Completed Section shows all completed work orders and reversals of completed work orders processed during the current day.

2.38.1.4. BMETs use this report for quality control on all work orders and work order reversals processed during the day and to ensure that computer records got properly updated.

2.38.1.5. BMETs maintain the daily work order registers until the monthly work order report is received.

2.38.2. *The Monthly Work Order Report* shows the current status of all work orders. It is also produced in two sections: New/Outstanding and Completed.

2.38.2.1. The New/Outstanding Section shows work orders pending completion, scheduled inspection work orders that are overdue, and outstanding scheduled work orders. BMETs should use this section to schedule the work.

2.38.2.2. The Completed Section shows all completed work orders, partially completed work orders, and work order reversals processed during the month.

2.38.2.3. BMETs maintain the monthly work order report Completed Section for 1 year.

2.38.3. *The Medical Maintenance Work Schedule* is printed monthly. It counts the incomplete unscheduled work orders, scheduled preventive maintenance work orders, and calibration work orders for each RC/CC code. It also contains the estimated PM hours by RC/CC code. BMETs should use this report to schedule the next month's workload.

2.38.4. *The Projected Workload Report* is produced quarterly and counts PM and calibration work orders and total PM man-hours for each RC/CC for the next 12 months. BMETs should use this report to analyze and plan the overall workload distribution.

2.38.5. *The Custodian Maintenance Report* shows completed, partially completed, and reversal work orders for each RC/CC. BMETs should use this report to inform equipment custodians of work performed for their sections.

2.38.6. *The Custodian Notification Report* is generated when a work order action code unable to locate (UL) is entered against a medical equipment item. BMETs should file one copy of the report and send the other two copies to the equipment custodian and MEMO.

2.38.7. *The Index Number Control List* shows the index number, stock number, RC/CC, and serial number of all extensive maintenance equipment and supply items. BMETs can produce this report by index number sequence and stock number sequence. BMETs should use it as a cross-reference to index numbers or stock numbers.

2.39. Nonautomated Work Order Procedures:

2.39.1. BMETs without the MEDLOG system will use AF Form 1763 to record the work request and document the action taken. BMETs transcribe repair data and any changes in the condition code of the repaired item to the appropriate AF Form 509, when they have completed the required maintenance.

2.39.2. BMETs use a manual work order register to assign work order numbers and manage unscheduled work loads. This work order register will include: Work order number, item description, using activity, index number, status, and date completed.

2.39.3. BMETs assign an eight-digit work order number composed of the current four-position Julian date (YDDD) followed by a four-position serial number assigned from 0001 to 0499.

2.40. Automated Medical Equipment Management Report. The MEDLOG generates the following reports to help BMETs manage the medical equipment maintenance activity:

2.40.1. *The Historical Maintenance Report* (HMR) contains historical maintenance information for significant items. BMETs can print the report by following the guidance in AFM 167-230.

2.40.2. *The Medical Equipment Repair Service Unit Cost Accounting* (UCA) *Expense Report* shows the number of PM and repair work-hours, number of completed work orders with the dollar value of spare parts, and contract cost expended by RC/CC. BMETs can use it to review costs and hours incurred by RC/CC. BMETs should provide a copy to the Resource Management Office each month.

2.40.3. *The Biomedical Equipment Maintenance Management Report*, (HAF-SGS(M7136), helps supervisors to evaluate the medical equipment maintenance function. The report has four sections:

2.40.3.1. Work Order Action Code Summary. This report prints a listing by action code of the number of completed work orders and hours against each action code. It gives the manager a summary of the actions performed to maintain equipment in the facility.

2.40.3.2. Technician Summary. This report contains a summary of work orders completed during the current month by technician code. It lists the number of work orders actions, work orders completed, PM hours expended, repair hours expended, total hours, and percentage of total hours expended by the technician. This report helps the manager keep track of the number of hours each technician has documented in the month.

2.40.3.3. Maintenance Source Code Summary. This report lists work orders completed and work hours expended by maintenance source code. Since the maintenance source code is locally established, BMETs use it to identify equipment under contract and sections within the shop that maintain specific items.

2.40.3.4. Management Summary. This report provides statistics and computations based on important aspects of the maintenance program. It provides:

- The monthly total of incomplete, completed, and canceled work orders.
- The status of the incomplete work orders.
- The status of aged work orders.
- Number of work hours expended.
- Spare parts issued, lost, and gained.
- The total value of spare parts.
- The dollar value of contract costs expended.
- The dollar value of in-use equipment.

2.40.3.5. What To Do With the Report. BMETs should use this report to monitor trends and evaluate changes in the operation of the organization. Give a copy of this report to the DML each month. BMETs should keep a copy of this report at the end of each fiscal year to help track long-term work load trends.

2.40.4. *The Component-to-End-Item Deletion List*, produced monthly, shows all erroneous component-to-end-item relationships found during monthly processing. BMETs should review the report to identify erroneous data and then correct the proper relationship.

2.40.5. *The Request Bench Stock Balance List* (BSL) gives a bench stock listing by stock number, location, or nomenclature sequence.

2.40.6. *The Request Work Order List* helps the BMET to manage outstanding work orders at any time during the month. Print this report during end-of-day processing. (See AFM 167-230.)

2.41. Keeping Historical Maintenance Records (HMR):

2.41.1. BMETs should use the HMR to effectively manage equipment assets. Properly prepared and maintained HMRs provide:

- Equipment identification data.
- Maintenance history.

- Maintenance actions.
- Condition of the equipment.
- Location of the equipment.

2.41.2. These records are helpful in budgeting because they can identify equipment that needs replacing.

2.41.3. BMETs ensure that the data in the HMR is current and accurate.

2.41.4. BMETs maintain HMRs for:

- All medical equipment and maintenance significant supply items listed in **Attachment 2**, regardless of ownership.
- Components X-ray, patient monitoring, laboratory, and other such systems.
- Any other items as determined by medical equipment maintenance personnel.

2.41.5. BMETs assigned to medical facilities must maintain the HMRs. When the facility does not have an assigned BMET, the activity responsible for providing support maintains the HMR.

2.41.6. For automated historical maintenance records:

2.41.6.1. HMRs in the MEDLOG system are a combination of the item master record and the QA maintenance record. The item master record is normally established by the stock record or the MEMO sections.

2.41.6.1.1. Medical equipment maintenance may also establish master records on:

- Components of equipment systems. BMETs may establish a separate item master record for each component of a system and relate the components to an end item according to AFM 167-230, paragraph 21.13.
- Items not normally maintained in the MEDLOG which require continuing maintenance. Examples include test equipment, line isolation monitors, and ground fault circuit interrupters.

2.41.7. Regarding Manual Historical Maintenance Records, BMETs maintain manual AF Form 509, **Medical Equipment Maintenance Records**, for those medical activities without a MEDLOG system.

2.42. Equipment Data File (EDF):

2.42.1. BMETs establish and maintain a separate history file on each equipment item including equipment rentals and equipment provided as part of a reagent or supply contract and for each RC/CC account that requires maintenance of nonindexed items.

2.42.2. BMETs maintain these files in index number sequence and retain them for the life of the equipment.

2.42.3. Each file will contain all significant historical information on the item, this includes:

- Initial inspection work order (initial measurement results of leakage current and performance and calibration parameter base lines) and any acceptance inspection reports.

- Scheduled preventive maintenance work orders that contain significant historical data (for example, repair actions taken against the work order, observed operator neglect, or information pertinent to the PM scheduling).
- All unscheduled work orders of indexed items for the life of the equipment and nonindexed items for 2 years.
- Calibration work orders.
- Warranty and guarantee data.
- Copy of the contract.
- All modifications, complaints, or recall information and related work orders.

2.43. Technical Reference File:

- 2.43.1. Each maintenance activity maintains a technical reference file on each item of medical equipment in accordance with NFPA 99, chapter 7. This file includes all manufacturers' operating and service literature.
- 2.43.2. File all items so they are easy to locate and traceable to the HMR.
- 2.43.3. Keep a copy of the equipment operator's instructions and procedures in the department that has the equipment.

Section 2F—Managing Repair Parts

2.44. Managing Bench Stock:

- 2.44.1. Repair parts maintained in the medical equipment maintenance section will be classified as bench stock, except for repair parts ordered for immediate use and common bulk hardware items such as: nuts, bolts, washers, pipe fittings, cotter pins, and wire.
- 2.44.2. Medical logistics should not carry repair parts in medical stock record account inventories but issues the parts to the medical equipment maintenance activity on receipt.
- 2.44.3. Effective management of bench stock is essential to the operation of the medical equipment maintenance function. Management efforts prevent excessive stockage or accumulation of slow moving or non usable repair parts.
- 2.44.4. BMETs maintain in bench stock only those repair parts needed on a continuing basis. If BMETs conduct PM inspections properly, they can anticipate and requisition most repair parts, especially high-cost items, on an as-needed basis.
- 2.44.5. You may keep excess bench stock at locations where supplies are slow to arrive or to enable you to immediately repair specific items of equipment that are essential to life support, emergency resuscitation, or continuity of operations.
- 2.44.6. BMETs should consider a number of factors when determining what parts and quantities to keep in peacetime bench stock:

2.44.6.1. Criticality of equipment. If the medical facility can function safely without the equipment for a short time, minimize or eliminate bench stock levels for repair parts.

2.44.6.2. Cost of Downtime. If the item is out of service, will patient appointments be canceled or will patients have to be referred to civilian facilities? The cost of lost work-hours and supplemental care may be more than the cost of maintaining repair parts in inventory.

2.44.6.3. Number of Units on Hand. The more units on hand, the more likely repair parts will be required and should be in bench stock. In some cases, repairs may be less urgent because there are enough items for exchange.

2.44.6.4. Consumption Rate. If a facility uses a repair part frequently, put it in bench stock.

2.44.6.5. Pipeline Time. Pipeline time is the time from when the repair part is ordered until it is received. If you anticipate a long pipeline time, keep a larger bench stock.

2.44.6.6. Cost of the Repair Parts. The three factors used to determine the overall cost of a repair part are:

- The dollar value of the part.
- The administrative cost of processing the purchase order.
- The minimum order level of the company.

NOTE:

The administrative cost of processing an order is substantially higher for a local purchase order than for a depot order. When establishing levels for inexpensive items, keep a 1-year supply with a low reorder point rather than ordering the item several times a year.

2.44.6.7. Shelf Life. Keep smaller amounts of items that deteriorate while in storage.

2.44.6.8. Age of the Equipment. As equipment gets older, breakdowns normally increase, resulting in greater demand for repair parts. Increase bench stock to meet these demands can increase losses because replacement equipment is likely to be different.

2.44.6.9. Availability of Blanket Purchase Agreements (BPA). BPAs may eliminate the need for stocking repair parts because you need little lead time for procurement. BPAs can thus reduce inventory costs, space requirements, and potential losses in bench stock.

2.44.6.10. Space Requirements. If you don't have a lot of room in the medical equipment maintenance activity for large repair parts, don't stock these items in the maintenance section.

2.44.7. BMETs manage bench stock levels to avoid tying up a lot of money in inventory and to minimize losses resulting from obsolete repair parts.

2.44.8. Medical equipment maintenance must annually review bench stock levels of all repair parts. BMETs with automated systems can use the bench stock balance list or a special purpose stock status report, referenced in AFM 167-230, to review bench stock levels.

2.44.9. BMETs store bench stock in a secure area within the medical equipment maintenance section.

2.44.10. BMETs conduct a physical inventory of all bench stock assets before 30 April each year.

2.44.10.1. Compare the actual inventory to the Bench Stock Balance List.

2.44.10.2. BMETs may conduct inventory on a cyclical basis throughout the year as long as all assets are inventoried by 30 April.

2.44.10.3. BMETs submit a list of all overages and shortages to the medical materiel logistics manager for approval or disapproval and recommended corrective actions.

2.44.10.4. Adjust bench stock balances by processing SPG and spare parts loss (SPL) transactions, but make sure these adjustments don't increase computer-controlled stock levels and items appearing on the spare parts requirements, if no valid requirement exists.

2.44.10.5. Nonautomated activities post inventory actions and adjustments on AF Form 1429, **Repair Parts Inventory Balance Record**.

2.44.11. BMETs must will carry spares and kits that are components of specified WRM assemblage programs on the supply records of the supply account until the assemblage is activated.

2.44.12. The MAJCOM and AFMLO/FOM will set bench stock levels for WRM assemblages. BMETs may ask AFMLO/FOM for assistance in modifying such levels.

2.45. Using the Automated Bench Stock System:

2.45.1. For bench stock repair parts at host maintenance activities, the automated bench stock system:

- Keeps track of on-hand balances.
- Notifies you automatically when you need to reorder parts.
- Calculates stock levels.
- Automatically updates repair parts cost to HMRs.

2.45.2. Bench stock levels can be assigned by medical equipment maintenance or by the computer.

2.45.2.1. Medical equipment maintenance can control bench stock levels by assigning a unique level code when the technician creates the bench stock record. Assign the level code by processing either a Revise Item Master (BRR) or Establish/Revise Stock Control Level (SLR) transaction.

2.45.2.2. Normally, you should use the SLR transaction because it also establishes the bench stock level.

2.45.2.3. BMETs assign unique level codes if:

- The repair part is newly stocked.
- Consumption of the repair part is unknown.
- Consumption of the repair part is low but the repair part supports critical medical equipment.

2.45.2.4. When consumption of the repair part has been relatively constant for at least 6 months, BMETs can allow the computer to control the bench stock level by processing a BRR transaction to remove the unique level. In calculating bench stock levels, the computer considers:

- Consumption history.
- Pipeline time.
- Cost of parts.
- Requirements code.

The actual computations performed can be found in AFM 167-230.

2.45.3. To establish a bench stock record, follow the guidance in AFM 167-230.

2.45.4. When medical materiel issues a bench stock item to maintenance, the computer automatically generates the Spare Part Gain (SPG) transaction and increases the bench stock balance.

2.45.5. BMETs process SPG transactions for items that are picked up from inventories or cannibalizations.

2.45.6. BMETs record repair parts to end items relationship according to AFM 167-230.

2.46. Issuing Bench Stock:

2.46.1. When BMETs issue bench stock to repair items belonging to the host, a tenant activity or to a detached facility that doesn't have computer support, they complete either a UWO transaction or a Spare Part Issue (SPI) transaction.

2.46.2. Processing UWO or SPI transactions results in the following:

- Decreases the bench stock balance record.
- Records the issue consumption in the bench stock record.
- Increases the cost of spare parts in the HMR.

2.46.3. BMETs should record bench stock losses due to deterioration with an SPL transaction.

2.46.4. Once bench stock records are established and on-hand balances drop below set levels, the computer produces a list of spare part requirements telling you what parts you need to replenish.

2.46.5. Each maintenance activity must review the spare part requirements list carefully to make sure that the items listed are valid requirements. They then establish or delete the requirement using the MEDLOG system.

2.47. Managing Bench Stock Excess:

2.47.1. BMETs periodically review bench stock balance records. Bench stock may build up if the facility uses few spare parts or has disposed of the equipment that required the parts.

2.47.2. BMETs report excess bench stock by preparing a turn-in document according to AFM 167-230 and then transfer the parts to medical materiel.

2.47.3. Medical materiel reports bench stock determined to be excess to local needs to AFMLO according to AFMAN 23-110, volume 5, chapter 20.

2.47.4. AFMLO periodically publishes a list of excess repair parts that are available for redistribution on a nonreimbursable basis.

2.47.5. BMETs should compare this list to their requirements list to see if they can use excess parts to satisfy their requirements.

2.48. MEDLOG Products for Managing Bench Stock:

2.48.1. *The Daily Bench Stock Balance List* shows the end-of-day balance for bench stock assets for which transactions were processed during the current month. BMETs should use this list to determine the current balance of bench stock assets if the computer is down.

2.48.2. *The Spare Part Inventory Adjustment Document* is generated during end-of-day processing as a result of an SPG or SPL transaction. It shows the bench stock adjustments and dollar values gained or lost. BMETs should verify each line item on the document.

2.48.2.1. The DML, clinical engineer, or designated BMET should sign this report.

2.48.2.2. Keep copies of these reports in a permanent file for 2 years.

2.48.3. *The Bench Stock Requirements List* is generated during end-of-day processing. The report shows which spare part items you may require to maintain bench stock levels. BMETs should validate the list and either establish requirements or delete them from the MEDLOG system.

2.48.4. *The Spare-Part-to-End-Item Deletion List* shows all relationships between spare parts and end items that were deleted during monthly processing.

2.48.4.1. The BMET should use the report to identify erroneous relationships and then correct the records.

2.48.4.2. Use this report to identify excess spare parts.

2.48.5. *The Medical Materiel Document Register*, Block V, is generated during the end-of-day processing when spare parts have been issued. BMETs should review the report for errors and correct them during the next on-line session.

2.48.6. *The Special Purpose Stock Status Report* provides a history of parts issue for the latest 12 months. The history begins on the date the item is first issued from bench stock rather than the date the item was placed in bench stock.

2.49. Manually Managing Bench Stock:

2.49.1. Medical equipment maintenance activities that aren't on MEDLOG will use AF Form 1429, to control repair parts maintained in bench stock. BMETs post all orders, gains, issues, losses, and inventory adjustments on this form.

2.49.1.1. BMETs group AF Forms 1429 by end item in NSN sequence, except for common or interchangeable parts. Group parts such as lamps, transistors, and so on under the heading "common parts" and file them in NSN sequence following the last end item group.

2.49.1.2. BMETs dispose of AF Forms 1429 according to AFI 37-138.

2.49.2. BMETs request all repair parts from the host medical materiel activity using normal issue procedures.

2.49.3. BMETs Document Issues by:

- Posting the issue on AF Form 1429.
- Recording the cost on AF Form 509, as appropriate.
- Documenting the issue on the work order.

2.49.4. Medical equipment maintenance must periodically review AF Form 1429 to see if on-hand quantities:

- Have fallen below the reorder point.
- Are excess to current needs.

- Are no longer required because of equipment turn-in.

2.49.5. BMETs turn in excess repair parts to the supporting stock record account. If the parts aren't needed locally, the host facility reports the excess repair parts to AFMLO according to AFMAN 23-110, volume 5, chapter 20.

2.50. Stock Numbers for Locally Purchased Repair Parts:

2.50.1. BMETs should assign stock numbers for repair parts purchased locally. All such stock numbers begin with a "P" to identify them as repair parts. The procedure for assigning these stock numbers depends on whether the medical equipment maintenance activity is in the continental United States (CONUS) or overseas.

2.50.2. The 1st position: Start each local purchase stock number with a "P."

2.50.3. 2nd through 5th positions: The AFMLO-assigned manufacturer's code.

2.50.3.1. AFMLO provides "P" number listings annually to all facilities. AFMLO updates the lists of manufacturers and their "P" numbers periodically in the AFMLL.

2.50.3.2. If you cannot find a "P" number for an item, request one for a new medical equipment manufacturer from AFMLO/FOM, DSN 343-7487. Requests are only for medical equipment manufacturers and must include the name and five-digit CAGE code. Make sure that the company for which a "P" number is requested is actually the manufacturer of the equipment item or repair part and not just a distributor.

2.50.4. 6th through 11th positions: The equipment manufacturer's repair part number (for CONUS activities).

2.50.4.1. If the repair part number has fewer than six characters, prefix the number with zeros to fill the field.

2.50.4.2. If the repair part number has more than 6 characters, put the last 6 characters of the part number in the 6th through 11th positions. If this "P" number is already in use, put "AA" in the 6th and 7th positions and a locally assigned number in the 8th through 11th positions.

2.50.4.3. Begin with locally assigned number 0001 for each manufacturer. Use the next number (0002, 0003, 0004, and so on) for the next "P" numbers as needed.

2.50.5. 12th through 15th positions: For CONUS activities, leave these positions blank for use by the base contracting automated system (BCAS).

2.50.5.1. For overseas activities, put the manufacturer's repair parts number in the 6th through 13th positions.

2.50.5.2. If this number has more than eight characters, use positions 14 and 15 on DPSC requisitions only.

2.50.5.3. If this number has fewer than eight characters, prefix it with zeros to fill the field to 13 positions.

2.51. Managing Nonrecurring Spare Parts:

2.51.1. Give nonrecurring spare part requisitions a management code other than "A" in the 2nd position of the procurement source and management code (PS&M). This code avoids establishing a bench stock record.

2.51.2. These repair parts appear on the using activity's back order and issue list and are issued to medical equipment maintenance instead of bench stock. Since the items are not entered on bench stock records, BMETs should use a UWO transaction to update the cost of the repair parts to the equipment item.

2.52. Finding Sources and Publications for Repair Parts:

2.52.1. BMETs use stock listed repair parts as much as possible.

2.52.2. BMETs may use locally procured repair parts if they are cheaper, better, or quicker to get.

2.52.3. BMETs may obtain nonstock-listed repair parts and emergency local procurement of stock-listed repair parts.

2.52.4. The materiel manager is normally the approving authority for the local purchase of spare parts. Managers may use a variety of contracting methods, including petty cash, local purchase, and decentralized blanket purchase agreements (DBPAs).

2.52.5. DPSC offers a number of DBPAs for local use.

2.52.5.1. These agreements cover spare parts, accessories, and calibration services.

2.52.5.2. AFMLO periodically publishes a listing of DBPAs in the AFMLL.

2.52.5.3. See AFMAN 23-110, volume 5, chapter 16, your materiel manager, and local contracting office for additional information on these procurement methods.

2.52.6. BMETs maintain a current copy of TM-DPSC-6500 RPL (medical repair parts list) published periodically by DPSC-MCSB. They will routinely use it to identify NSNs for repair parts before submitting a local purchase request. This publication contains a cross-reference between manufacturers' part numbers and NSNs for commonly used repair parts.

2.52.6.1. Procedures for ordering TM-DPSC-6500 RPL are contained in S-2A-1, *Index of USAF and DoD Federal Supply Catalogs and Related Cataloging Publications*, and AFI 37-161, which can be obtained through the facility's PDO.

2.52.6.2. The management data list (ML) of the appropriate Federal supply catalog contains management data, such as cost, quantity, unit pack, and acquisition advice code (AAC), for items published in the RPL.

2.52.7. BMETs should:

- Contact DPSC-MCSB at DSN 444-4191/5918 for help in identifying stock listed repair parts.
- Submit recommendations for additions to, deletions in, or revisions of the RPL through the local medical materiel manager to AFMLO/FOM.

2.52.8. Other mandatory supply publications that medical equipment maintenance activities may use to research spare parts are listed below. S-2A-1 and AFI 37-161 tell how to obtain these publications:

- MCRL-1, *USAF Master Cross Reference List, Part Number to NSN*.
- MCRL-2, *USAF Master Cross Reference List, NSN to Part Number*.

- S-2A-1, *USAF Index of Federal Supply Catalogs*.
- H4-1/H4-2, *Federal Supply Codes for Manufacturers*.

Section 2G—Using Other Maintenance Sources

2.53. Using Contract Maintenance:

2.53.1. AFMAN 23-110, volume 5, chapter 16, tells how to purchase commercial contract maintenance locally. Commercial contract maintenance is authorized to supplement the organizational maintenance program when:

- Adequate resources or skills are not available.
- High costs of training or specialized test equipment make it too expensive to develop an in-house maintenance capability.
- Depot level maintenance is either not available, not responsive, or more expensive than commercial sources.

2.53.2. BMETs will not routinely use commercial contract maintenance to maintain equipment that is similar to equipment included in the TAs for WRM assemblages. WRM items are those equipment items included in **Attachment 3** that have a stored maintenance frequency.

2.53.3. The Defense Personnel Support Center (DPSC), Philadelphia PA 19101, has negotiated DBPAs for the repair and calibration of selected items of medical equipment and medical maintenance test equipment.

2.53.4. AFMLO publishes lists of available DBPAs in each AFMLL and forwards copies of all active DBPAs to all FM accounts.

2.53.5. Maintenance personnel should ask host supply accounts for a copy of contracts that include repair and return in order to become familiar with their terms and limitations.

2.53.6. BMETs ensure that annual contracts for PM, calibration and repair, and one-time repair actions specify:

- The equipment involved.
- Whether parts are included.
- The maintenance procedures to be used.
- Hours of service.
- Response time.
- Performance standards.
- Frequency of servicing.
- Documentation of work performed.
- Reporting instructions.
- Distribution of service reports.
- Return of defective parts.

2.53.7. In addition, BMETs ensure that contracts for periodic calibration of medical equipment specify the accuracy specifications and tolerances to which equipment will be calibrated. They will ensure that the contracts require the contractor to furnish documentation that shows the calibration results.

2.53.8. BMETs ensure that contracts for maintenance services require contractors' representatives to report to the medical equipment maintenance activity before and after any services. BMETs establish local procedures to control contractors during other than normal duty hours.

2.53.9. The DML designates quality assurance evaluators (QAEs) for appointment by the commander for each contract as required. BMETs normally act as QAEs on all contracts involving medical equipment and verify that the contractor fulfills all provisions of the contract.

2.53.10. The QAE (BMET) maintains a copy of each contract and service report in the medical maintenance section and ensure that the using section has a copy. The BMET keeps the contract in the equipment data file or establishes a separate file for each recurring contract. The file should contain the following:

- Copy of the purchase order and contract with cost figures.
- Equipment items, model, serial number, and index number
- Point of contact and emergency contact procedures and phone numbers.
- Contractor's service report and any medical maintenance work orders used to document the completed work.

2.53.11. Maintain documentation for one-time repair contracts in the individual equipment data files.

2.53.12. BMETs update the MEDLOG system with a work order action code of Returned to Contractor (RC) when an item is sent to a contractor for repair.

2.53.13. BMETs should assign maintenance source codes to equipment data records for equipment that is covered by a maintenance contract. BMETs enter the locally assigned code by using an RVM transaction. They then generate a list of all items under contract by completing a Request Maintenance Source List (MSL) transaction.

2.54. Using United States Army Depots:

2.54.1. The United States Army Medical Materiel Agency (USAMMA) Medical Maintenance Operations Divisions, located at Tobyhanna Army Depot, PA, and Defense Distribution Region West, Tracy CA, provide depot-level maintenance services for selected medical equipment.

2.54.2. Capabilities include:

- Repairing and calibrating dental hand pieces and surgical air drills.
- Refurbishing mobile X-ray units.
- Rebuilding or remanufacturing X-ray tube heads.
- Repairing and overhauling optical equipment.
- Fabricating X-ray high voltage cables.
- Refurbishing mobile battery packs (Tracy only).
- Repairing selected printed circuit boards and other items of electronic medical instrumentation.

2.54.3. USAMMA Maintenance Divisions maintain a stock of selected items of medical equipment and major components to provide direct exchange service. BMETs may telephone the USAMMA Medical Maintenance Operations Divisions to get assistance, special shipping, and documentation instructions.

2.54.4. Air Force facilities reimburse USAMMA for services performed from local operations and maintenance (O&M) funds. Medical materiel activities should process all formal transactions and furnish appropriate fund citations for the cost of repair and transportation.

2.54.5. BMETs submit recommendations for additions to the Air Force float stock through command channels to AFMLO/FOM. Report any difficulties in obtaining service or any inadequate or untimely service to AFMLO/FOM and furnish copies of the report to Commander, United States Army Medical Materiel Agency, ATTN: SGMMA-M, Frederick MD 21702-5001.

2.54.6. Activities located at the Elmendorf, Travis, Lackland, Sheppard, and Scott Air Force Bases, and PACAF MERC regions use the services of the USAMMA Medical Maintenance Operations Division located at Defense Distribution Region West, Tracy, when feasible.

2.54.6.1. Address shipments to:

Medical Maintenance Operations Division
United States Army Medical Materiel Agency
ATTN: SGMMA-MDC
Building T255, Defense Distribution Region West
Tracy CA 95376-5050

2.54.6.2. Address correspondence to:

Chief, Medical Maintenance Operations Division
United States Army Medical Materiel Agency
ATTN: SGMMA-MDC
Defense Distribution Region West
Tracy CA 95376-5050
DSN 462-9557, Commercial (209) 832-9557

2.54.7. Activities located in the remaining MERC areas should use the services of the USAMMA Medical Equipment Maintenance Division at the Tobyhanna Army Depot.

2.54.7.1. Address shipments to:

Medical Maintenance Operations Division
United States Army Medical Materiel Agency
ATTN: SGMMA-MDP
Warehouse 4, Bay 1, Tobyhanna Army Depot
Tobyhanna PA 18466-5063

2.54.7.2. Address correspondence to:

Chief, Medical Maintenance Operations Division

United States Army Medical Materiel Agency

ATTN: SGMMA-MDP

Tobyhanna Army Depot

Tobyhanna PA 18466-5063

DSN 795-7612 or 7744, Commercial (717) 894-7612 or 7744

2.54.8. Overseas activities may also use the medical equipment repair capabilities of any in-theater Army medical materiel center.

2.54.9. Document support of this type in a formal support agreement and send a copy of this agreement to AFMLO/FOM.

2.54.10. You can send dental hand pieces and optical equipment for USAFE facilities to the United States Army Medical Materiel Center Europe at Pirmasens, Germany, for repair. Include DA Form 2407, **Maintenance Request**, with each item shipped for repair. To use this facility, the host FM account prepares DD Form 1144, **Support Agreement**, and forwards it to:

Commander, United States Army Medical Materiel Center Europe

ATTN: Director for Maintenance/AEMMM-M

APO AE 09138

2.54.11. BMETs use DD Form 1348-1, **DoD Single Line Item Release/Receipt Document**, to ship equipment or request fabrication of X-ray cables. Complete DD Form 1348-1 as shown in AFMAN 23-110, volume 5, chapter 12, attachment 1.

2.54.12. When you use this form for repair and return or fabrication fill it out as follows:

- Block B - Enter the "Ship To" address of the Army medical maintenance activity to which you are forwarding the item or request.
- Block Y - Indicate if certification is required by entering "CERTIFICATION REQUIRED" if the item is an X-ray tube or major component.
- Block W - Enter "REPAIR AND RETURN," "FABRICATION," "LOANER RETURN," "CLEAN ONLY," or other instruction specifying the exact services you require. You will receive and be billed for complete overhaul and rebuild services unless you specify the services you need.
- Block AA through CC - Enter fund citation for work requested (coordinate with the resource manager) and signature of base accounting and finance officer.
- Block 13 - Enter the transportation fund citation for the item to be returned.

2.54.12.1. Indicate the priority of repair in columns 60-61 using the two-digit MILSTRIP priority designator listed in AFMAN 23-110, volume 5, chapter 8.

2.54.13. Following are special instructions for packing repair and return items:

- Place DD Form 1348-1 inside the shipping container.
- Ship all accessories with the end item to ensure prompt repair.

- Properly pack and mark the package to avoid damaging the instruments. See if the manufacturer's literature gives any special packing or shipping instructions.

2.54.14. BMETs should enter all United States Army depot charges for labor, repair parts, and transportation of medical equipment in the contract costs field of the equipment data record. See AFM 167-230 for procedures for uploading contract costs.

2.55. Precision Measurement Equipment Laboratories (PMEL):

2.55.1. AFI 21-113, *Air Force Metrology And Calibration Program*, provides procedures for managing the Air Force metrology and calibration program (AFMETCAL). TO 33K-1-100-1 outlines equipment user-owner responsibilities under the AFPMEL program. In support of this program, selected Air Force bases establish PMELs to provide an intermediate maintenance capability for the repair, calibration, and certification of precision measurement equipment.

2.55.2. For medical facilities, pmels work on:

2.55.2.1. Maintenance test equipment such as oscilloscopes, voltmeters, and signal generators

2.55.2.2. Precision measurement instruments used for medical programs other than direct patient care, such as radiation and sound level instruments used by the bioenvironmental engineer.

2.55.2.3. Scales used directly for life support, that is, patient scales used in chemotherapy, infant scales used in nurseries, bed scales used to measure fluid intake and loss, and scales used in the Air Force weight control program and the flight medicine sections. **NOTE:** Scales used in other areas of medical treatment facilities do not require PMEL certification or complete calibration traceable to the National Institute of Standards and Technology. The local BMET checks them. (See TO 33K-1-100-1, 3-1, m(1).)

2.55.3. All other items of medical equipment related to the diagnosis and treatment of patients are specifically exempt from PMEL support. The Air Force Medical Service is responsible for the calibration and maintenance of these items of equipment under the provisions of this chapter.

2.55.4. The medical equipment maintenance activity will designate a PMEL monitor who ensures that all test equipment that can be calibrated by PMEL is included in the PMEL program and is delivered to PMEL in a timely manner for calibration. The monitor will verify that PMEL equipment has a current AFTO Form 99, 108, 394, or 398, **TMDE Certification**, showing that the item is not due for calibration.

2.55.5. The PMEL monitor annually reviews and updates the PMEL list of equipment to ensure that all items in **Attachment 2** and other miscellaneous support items that need calibration are included.

2.55.6. The PMEL monitor ensures that the facility has in-house procedures to contact PMEL when it receives new test equipment.

Chapter 3

ESTABLISHING AN INTERMEDIATE LEVEL MAINTENANCE PROGRAM

3.1. Medical Equipment Repair Center (MERC):

3.1.1. The regional MERC program provides extensive calibration services, quality assurance surveillance, technical assistance, consulting on equipment procurement, and management assistance to all bases within a region.

3.1.2. A MERC is a consolidated maintenance activity that, in addition to providing organizational maintenance support for the facility to which it is assigned, provides intermediate-level maintenance, engineering support, and consulting services to Air Force and Air Reserve Components medical activities located in its geographic area.

3.1.3. See **Attachment 4** for a list of medical activities designated as MERCs and the units for which they are responsible.

3.1.4. Staffing requirements for MERCs are based on the Air Force Manning Standard 5110.

3.1.5. MERCs must report to AFMLO/FOM any changes in activities that they support.

3.2. Responsibilities:

3.2.1. The chief or superintendent of the MERC:

- Budget and plan for all resources required for regional MERC support, including funding, staffing, facilities, and test equipment requirements.
- Ensure intermediate level maintenance support is provided to all medical activities in the designated geographical area of responsibility.
- Conducts management assistance visits at all active duty locations in the MERC's geographic area of responsibility according to this chapter.
- Informs MAJCOMs and AFMLO/FOM of problems that may keep the MERC from accomplishing its mission, as outlined in this chapter.

3.3. Scheduled MERC Functions:

3.3.1. MERCs furnish organizational-level maintenance to those medical facilities that do not have BMETs assigned or authorized.

3.3.1.1. MERC will provide maintenance teams semiannually and emergency repair service upon request. When the quantity of equipment, cyclic maintenance requirements, or location of the unit does not warrant semiannual maintenance cycles, the regional MERC may request a waiver to the semiannual requirement. The MERC coordinates the waiver with the supported activities and MAJCOMs involved and forwards it to AFMLO/FOM.

3.3.1.2. The MERC provides guidance to supported bases on how to obtain non-emergency minor service.

3.3.2. MERCs may provide organizational maintenance for Air Reserve Component medical activities on an annual basis.

3.3.3. The MERC provides intermediate-level maintenance annually to all medical facilities in the designated area that have BMETs authorized and assigned. Notify these bases by letter 30 days before the MERC visit. This support will include:

3.3.3.1. Providing on-site calibration service for equipment items such as audiometers, defibrillators, and other items as shown in the medical device calibration or certification requirement list, **Attachment 3**

3.3.3.2. Performing quality assurance testing in those instances when **Attachment 2** indicates both the MERC and the local maintenance activity as the calibration source.

3.3.3.3. Performing quality assurance testing when the local activity is equipped to perform their own calibration. The MERC performs quality assurance testing of at least the following listed items:

- Anesthesia equipment.
- Defibrillators.
- Electrocardiographs.
- Ventilators.
- Ultrasonic therapy (diathermy) units.

NOTE:

For the purpose of QA testing, the MERC should test 25 percent of the organization's in-use equipment in each of the listed equipment family groups. If the MERC notes a major procedural or test equipment deficiency in any sample selected, the MERC will test all items in the family group and calibrate all items except those under contract for calibration. If items are on contract, the local BMET notifies the contractor of the discrepancy and asks the contractor to recalibrate the equipment items within standards, if this is within the scope of the contract.

3.3.3.4. Conducting a complete calibration verification and an assessment of the unit's condition, quality of past maintenance, adequacy of calibration documentation, and critical safety factors.

3.3.4. MERC chiefs may add additional calibration and QA services to this list as they become necessary in their region. When adding a service to this minimum list, the MERC should send a copy of the OI describing the test procedure and required test equipment to AFMLO/FOM.

3.3.5. MERCs document work accomplished and repair parts issued according to this instruction and AFM 167-230.

3.3.5.1. The supported organization processes this data into the MEDLOG system.

3.3.5.2. MERC personnel make the required entries on AF Form 509 for supported activities that are not automated. These entries describe the exact maintenance actions performed.

3.4. Other MERC Functions:

3.4.1. Bases within the region can request the mercs to:

- 3.4.1.1. Provide technical assistance to resolve maintenance problems that are beyond the capability of local BMET.
- 3.4.1.2. Provide consultation and technical services in critical areas of medical instrumentation and electrical safety.
- 3.4.1.3. Conduct preinstallation surveys for planned complex equipment procurement such as X-ray, sterilizers, and central patient monitoring systems that are beyond the capability of the local BMET.
- 3.4.1.4. Install major equipment systems such as X-ray units, sterilizers, and physiological monitors when contract services cannot be obtained because the location is too remote or because of the particular mission, or when in-house BMETs can't install the item.
- 3.4.1.5. Conduct equipment acceptance inspections for contractor-installed major equipment items.
- 3.4.1.6. Provide specialized field training including regional seminars for users and BMETs for newly procured complex equipment items. The MERC assigned to the Wilford Hall Medical Center, Lackland AFB TX, maintains a central library of videotapes to augment this program.
- 3.4.1.7. Provide equipment consulting service for medical logistics activities procuring complex medical instrumentation.
- 3.4.1.8. Assist health facility offices that are selecting equipment for military construction programs.
- 3.4.1.9. Provide organizational-level maintenance support for short periods when in-house maintenance activities don't have enough personnel.
- 3.4.1.10. Provide backup medical equipment maintenance support in the event of natural disasters.
- 3.4.1.11. Give emergency assistance in base closure or expansion actions.
- 3.4.1.12. Provide assistance and consulting services in all aspects of medical equipment management, such as medical equipment acquisition, personnel assignments, and unique organizational management situations, as requested by MAJCOMs .

3.5. MERC Trip Reports:

- 3.5.1. The MERC prepares a trip report reflecting maintenance actions accomplished or currently pending. The trip report keeps the base up to date on maintenance activities. **NOTE:** The reporting requirement in this paragraph is exempt from licensing in accordance with paragraph 2.11.2 of AFI 37-124.
- 3.5.2. Number these reports consecutively beginning with the start of each fiscal year. For example, 94001 would be the first report prepared in FY 94.
- 3.5.3. The trip report should include:
 - Purpose of the visit.
 - Key personnel contacted.

- An executive summary with all items of interest (major safety violations, equipment problems, and other matters) that the commander should know about.
- Work performed.
- Test equipment used (manufacturer, model number, index or serial number, and date of last calibration).
- Copies of all calibration documentation including photographs of output wave forms where applicable.
- **Work-hour and dollar value summary of services performed. NOTE: When the MERC visits more than one facility in a single trip, base the distribution of per diem and travel expenses on the relative percentage of total work-hours expended at each facility.**

3.5.4. Distribute MERC trip reports as follows:

3.5.4.1. Provide the report to the DBMS of the supported base within 45 days of completing each maintenance visit.

3.5.4.2. Send a copy of the report to each applicable MAJCOM and to AFMLO/FOM. Don't send copies of the technical attachments to MAJCOMs unless specifically requested.

3.5.4.3. Send copies of the Radiology Technical Attachment to the medical physicist at Armstrong Labs (OEB2), 2402 East Drive, Brooks AFB TX 78235-5114.

3.5.4.4. When the trip included visits to Air Reserve Components, send a copy of the report to the visited unit and the appropriate headquarters.

3.5.5. Supported bases respond in writing to items identified in the reports that require local action. Send the response to the MERC within 45 days of receiving the report. Send a copy of this letter to the MAJCOM and to AFMLO/FOM.

3.5.6. MERCs maintain copies of completed trip reports for 2 years.

3.6. MERC Management Assistance:

3.6.1. In addition to providing maintenance services, the MERC provides management and consulting service to supported activities.

3.6.2. While MERCs are always available to answer questions through telephone conversations and correspondence, the MERC chief or superintendent annually visits each active duty facility with BMETs authorized and assigned.

3.6.3. During this visit, the MERC chief or superintendent evaluates the technical management of the organizational maintenance program and helps resolve problems in acquiring, using, and maintaining medical equipment.

3.6.4. Forward the written results of this evaluation to the supported activity, its MAJCOM, and AFMLO/FOM as a separate trip report, indicating the findings and recommended actions.

3.6.5. The MERC officer or superintendent reviews and evaluates:

3.6.5.1. Maintenance management procedures.

3.6.5.2. PM/calibration program and general condition of in-use equipment.

- 3.6.5.3. The equipment electrical safety and user training program.
- 3.6.5.4. Repair parts inventory management, including inventory accuracy and the actual dollar value of the bench stock.
- 3.6.5.5. Contract maintenance files to see whether each contract is necessary and adequate, given the skills and training of assigned maintenance personnel. Reviews all provisions of equipment maintenance contracts.
- 3.6.5.6. The adequacy of current maintenance personnel by rank and skill levels, shop facilities, and test equipment.
- 3.6.5.7. Base level on-the-job-training, including individual task performance, the section's training plan, and technical training requirements.
- 3.6.5.8. The Quality Assurance program.
- 3.6.5.9. Major equipment acquisitions, installations, maintenance plans, and current installation problems or delays.

3.7. Reducing or Terminating MERC Support:

- 3.7.1. MERC activities will not abruptly terminate or reduce the level of support provided to activities. When MERCs anticipate an unavoidable reduction in support, they inform the supported activity at least 120 days before the scheduled visit.
- 3.7.2. The notice to the supported activity must fully explain the anticipated reduction and tell how long service will be reduced or interrupted. Inform the supported activity that it should arrange for equipment calibration by bringing the equipment to the MERC or by using contract support.
- 3.7.3. Send copies of the notice to the MERC's MAJCOM, supported bases' MAJCOM, and AFMLO/FOM.
- 3.7.4. MAJCOMs responsible for the supporting MERC will initiate actions to correct the reduction of support. Inform AFMLO/FOM of the anticipated "get well" date. If MAJCOM can't resolve the problem on its own, it forwards recommendations to AFMLO/FOM.

3.8. MERC Loaner Items:

- 3.8.1. MERCs are authorized to maintain an inventory of equipment items, subassemblies, or components of major equipment systems to exchange with supported bases. These items are classified as loaners and are authorized and funded by MAJCOMs according to existing procedures.
- 3.8.2. Examples of loaner items are audiometers, defibrillators, and X-ray tube heads.

3.9. Responsibilities of the MERC-Supported Base. Units supported by MERC activities will:

- 3.9.1. Notify the MERC if you acquire new equipment that needs additional MERC support.
- 3.9.2. Inform the facility commander, administrator, and DML of an upcoming MERC visit. Ensure that they understand what services the MERC will provide.
- 3.9.3. Inform departments that have equipment requiring MERC calibration well in advance of an impending MERC visit so the visit disrupts patient care as little as possible.

3.9.4. Print work orders and have them available so personnel can complete the documentation as they do the work.

3.9.5. Help the MERC team locate the equipment requiring calibration. Introduce the equipment custodians to the team members.

3.9.6. Make billeting arrangements for the MERC team.

3.9.7. Review MERC trip reports, take appropriate actions as required, and respond in writing to items identified in the reports as requiring local action. Send the response to the MERC within 45 days of receiving the report. Send a copy of this letter to the MAJCOM and to AFMLO/FOM.

Chapter 4

ESTABLISHING A FACILITY MANAGEMENT (FM) PROGRAM

Section 4A—Administering the Program

4.1. Program Purpose:

4.1.1. The FM support program ensures that the Air Force acquires, operates, repairs, maintains, alters, and cleans its medical buildings and associated utility, transport, and communication systems in a manner that provides the most suitable and productive environment for normal medical operations and planned contingencies.

4.1.2. Accomplishment of this function requires careful attention to the following concepts:

4.1.2.1. Life Safety. Building systems must function reliably, safely, and meet applicable codes and standards. Life safety issues protect patients, staff, and visitors against undue risk of fire or other hazards.

4.1.2.2. Medical Functionality. People and equipment must have adequate and efficiently used space. Patients must have convenient physical access to facilities.

4.1.2.3. Engineering. The physical plant must be properly operated, repaired, and maintained. This includes preventive maintenance, repair, alteration, and replacement of the buildings and associated utility systems. Also, the facility must be operated and maintained in a manner that conserves resources, prevents contamination of the surrounding environment, and prevents injury to patients, visitors, or staff.

4.1.2.4. Professional Environment. The interior and exterior appearance must be aesthetically pleasing to patients and enable the staff to deliver high quality medical care. Exterior landscaping must be attractive and kept neatly trimmed and clean.

4.1.2.5. Safety and Resource Protection. The facility must be operated and maintained to provide a safe environment for patients, visitors, and staff. Adequately provide for the protection of Government facilities, property, and personnel.

4.1.2.6. Documentation. Maintain a program of documentation that meets regulatory and accreditation requirements, as well as the administrative needs of the FM program.

4.2. Responsibilities of the Facility Manager:

4.2.1. The clinical engineering officer, noncommissioned officer (NCO), or civilian designated as the facility manager implements and manages the FM program. ANG units may assign an individual to serve as the facility manager.

4.2.2. The Facility Manager:

4.2.2.1. Serves as the liaison with outside support agencies such as regional health facilities offices (HFOs), base civil engineering (BCE), base communications, base contracting, base fire department, base safety, and security police.

- 4.2.2.2. Prepares estimates for the annual MTF and MAJCOM/SG budget and financial plan programs. Estimates cover routine O&M programs and the Real Property Maintenance by Contract (RPMC) Program for maintenance, repair, and minor construction of medical real property assets.
- 4.2.2.3. Serves as or supervises the safety officer or NCO and serves as a member of the MTF safety committee.
- 4.2.2.4. Ensures compliance with standards published by JCAHO, NFPA, OSHA, EPA, and AFI 91-301 to the maximum extent possible.
- 4.2.2.5. Identifies modifications necessary to keep the facility in compliance with federal and state regulations.
- 4.2.2.6. Manages the housekeeping function if performed "in-house." Serves as or oversees the QAE if a contractor performs housekeeping.
- 4.2.2.7. Manages the MTF security and resource protection program.
- 4.2.2.8. Oversees acquisition, installation, and maintenance of communications systems in the MTF.
- 4.2.2.9. Manages the facility land mobile radio (LMR) network.
- 4.2.2.10. Serves as a representative on the base Communications Computer Systems Requirements Board.
- 4.2.2.11. Reviews BCE contracts that provide the MTF with refuse collection, elevator maintenance, hood and duct cleaning, and other services.
- 4.2.2.12. Manages the MTF and grounds maintenance programs.
- 4.2.2.13. Prepares and sends work requests to BCE and follows up on work requests.
- 4.2.2.14. Develops and maintains a long-range facility master plan (FMP) that includes facility projects to be paid for with military construction project (MCP) or operation and maintenance (O&M) funds.
- 4.2.2.15. Maintains a set of current architectural drawings, plans, diagrams, and other records for each facility designated with a medical real property category code (5XX-XXX). Has access to other drawings, as necessary, including drawings that show all utility shut-off valves and controls.
- 4.2.2.16. Serves as the real property building manager for the MTF and as a member of the medical facility utilization board, if one exists.
- 4.2.2.17. Develops Performance Work Statements (PWS) for requirements that base activities don't support and for which no one has developed a PWS
- 4.2.2.18. Reviews proposed equipment installation requirements and determines what modifications the facility and utilities need.
- 4.2.2.19. Where required by occupancy classification (per JCAHO and National Fire Protection Association [NFPA] requirements, ensures that the emergency power system is sufficiently adequate and reliable to provide power to designated areas during interruption of the normal power source for the facility.
- 4.2.2.20. Develops and manages the energy efficiency program.

4.2.2.21. Manages the proper removal, treatment, storage, and disposal of regulated medical waste.

4.2.2.22. Serves as a member of the infection control committee.

4.3. Inspection Program:

4.3.1. The Air Force hospital or clinic inspection program works on a building block concept from self-inspection up to JCAHO survey.

4.3.2. Self-Inspection : The facility manager will develop a self-inspection checklist and perform annual self-inspections to ensure the function is well managed.

4.3.2.1. Self-inspection is an organized method of internal review that allows a manager to view critical areas and available resources. The facility manager can assess the operation without influence from outside the organization.

4.3.2.2. The self-inspection focuses on the mission, resources, training, and personnel within the department. The facility manager uses the self-inspection to identify and clear up problems before a staff assistant visit (SAV) or an HSI.

4.3.3. Staff Assistance Visits. The SAV is an informal but very important inspection that helps functional areas comply with regulations and identify problem areas needing attention before an HSI.

4.3.3.1. MAJCOMs perform the SAV using HSI checklists, JCAHO standards, NFPA codes and so on.

4.3.3.2. Facilities are accountable for findings identified during a SAV.

4.3.3.3. Facility managers maintain copies of SAV reports for 2 years.

4.3.4. Health Services Inspection (HSI). The objective of the HSI is to ensure that the MTF is providing quality medical care. The Directorate of Medical Inspection, HQ AFISC/SG, Kirtland AFB, conducts HSIs using criteria they have developed and coordinated with HQ USAF/SG. After an inspection, the HSI team generates a findings report and provides it to the commander of the facility. Obtain copies of this report from the Resource Management Office.

4.3.5. JCAHO Surveys. The facility manager ensures that the facility complies with all requirements in the Plant, Technology, and Safety Management (PTSM) section and any other applicable sections of the current JCAHO Accreditation Manual for Hospitals. Clinics must comply with the Ambulatory Care Standards Manual.

4.4. Financial Management:

4.4.1. The facility manager is responsible for financial planning, programming and budgeting, and monitoring of expenses within FM.

4.4.2. Annually, at a time specified by the RMO, the facility manager prepares and submits budget requirements for the following fiscal year.

4.4.2.1. The budget submission must include materials, labor, supplies, utilities, BCE reimbursables, construction, and all contract services costs. Break the items down by Elements of Expense Investment Codes (EEIC). The budget:

- Includes all expected expenses.

- Is as specific as possible.
- Clarifies for the RMO how the estimates were derived.

4.4.2.2. AFMLO/FOM lists EEIC expenditures to include in a FM budget. This list helps the facility manager and need not be all inclusive. Individual MTFs may have requirements unique to their facility.

4.4.2.3. The facility manager coordinates the budget needs with the MTF using activities and staff.

4.4.3. The facility manager monitors FM reimbursable expenses and contract costs.

4.4.3.1. Because BCE provide services in a wide variety of ways, the Air Force doesn't prescribe a standard method of monitoring these charges. The MTF administrator or DML determines how carefully to look into these charges and seeks advice from the chief of industrial engineering in BCE.

4.4.3.2. Facility managers should use work order logs and WIMS reports provided by BCE to evaluate these expenses.

4.4.3.3. Facility managers at overseas locations should ask host-nation engineering support for statements of charges for work performed.

4.4.3.4. The resource manager and the facility manager must mutually agree on a method for validating the facility reimbursable costs from BCE.

4.4.3.5. The facility manager:

- Reviews and approves all BCE utility bills before the resource manager pays them.
- Must understand how BCE calculates charges for utilities (by square feet, by usage, by personnel).
- Confirms that BCE is using the proper factors in its formulas.
- Validates meter readings.
- Monitors utility price changes and their impact on funding.

4.5. Finding Additional Information and Guidance:

4.5.1. FM maintains a current file of the publications listed in attachment 5, paragraph **A5.1.** or has ready access to them. FM staff must be familiar with their contents.

4.5.2. The publications listed in attachment 5, paragraph **A5.2.**, are not required; they are useful and may be maintained by FM.

4.5.3. You can obtain the commercial publications from the sources listed in attachment 5, paragraph **A5.3.**

4.5.4. The forms needed to effectively manage FM are listed in attachment 5, paragraph **A5.4.**

Section 4B—Ensuring Safety in the Medical Treatment Facility

4.6. General Guidance:

4.6.1. The MTF safety program ensures a safe environment for patients, staff, and visitors and reduces the risk of human injury in the facility or on the grounds.

4.6.2. The facility manager:

- Oversees the development, implementation, and monitoring of the MTF facility safety management program.
- Collects and evaluates hazard and safety practice information so the safety committee can address pertinent safety management issues.
- May be the safety officer or may supervise an individual assigned as safety officer.

4.7. Responsibilities of the Safety Officer:

4.7.1. The commander appoints a safety officer in writing.

4.7.2. This appointment authorizes the safety officer to intervene when conditions pose an immediate threat to life or health or pose a threat of damage to equipment or buildings.

4.7.3. The safety officer will immediately notify the administrator when such a condition exists.

4.7.4. The safety officer:

4.7.4.1. Serves as the point of contact for the medical facility on safety matters, inspections, and investigations and works with the base ground safety office.

4.7.4.2. Communicates with bioenvironmental engineering, environmental health, and infection control on MTF safety issues and asks for technical advice when necessary. (See AFI 91-202; AFI 91-204 and AFI 91-301.)

4.7.4.3. Completes and submits AF Form 711a, **Ground Mishap Report**, to the base safety office for reportable mishaps that occur on MTF grounds.

4.7.4.4. Represents the medical facility at the installation safety council according to AFI 91-202.

4.7.4.5. Ensures there is a program for distributing medical device recalls and hazard alert notices. Makes sure that personnel follow the recommended procedures and document the corrections. **NOTE:** Medical stock records personnel (supplies) and BMETs (equipment) normally distribute recalls and hazard alerts according to **Section 2D**

4.7.4.6. Ensures that all new medical facility personnel receive initial and annual refresher safety training. Has supervisors document all safety training on AF Form 55, **Employee Safety and Health Record**. Reviews departmental safety briefings and newcomers' orientation programs.

4.7.4.7. Conducts and documents facility safety surveys of all MTF buildings twice a year. Identifies and corrects environmental hazards and unsafe practices. (See AFOSH Std 127-8, paragraph 3p(2)(b).)

4.7.4.8. Ensure staff members complete and turn in AF Form 765, **Hospital Incident Statement**, to the risk manager for each reportable incident involving patients, visitors, or staff that occurred on the grounds of or in any of the assigned MTF buildings.

4.7.4.9. Summarizes safety actions and safety committee activity on a quarterly basis. Provides the summary to the executive committee, the administrator, and other responsible monitoring activities, including the QA and risk management committee.

4.7.4.10. Maintains safety reference materials that include appropriate JCAHO and NFPA guidance, Air Force safety regulations, AFOSH Standards, and local and base safety policies. **NOTE:** Base safety may be able to help the safety officer find appropriate reference materials.

4.7.4.11. Actively participates in facility safety committee meetings. Periodically presents the status of all aspects of the safety program to the committee, including results of and follow-up actions on inspections by outside agencies.

4.7.4.12. Monitors the fire prevention and protection program. Serves as area fire marshal as outlined in AFI 32-2001 and local procedures for fire and safety inspections, drills, and training. Reports the results of all fire drills to the safety committee.

4.7.4.13. Reviews waste handling practices during quarterly facility safety surveys to make sure that all areas comply with the MTF waste management program. Ensures that supervisors are documenting waste management training on AF Form 55.

4.8. Responsibilities of the Safety Committee:

4.8.1. The DBMS or administrator will appoint a safety committee in writing with representatives from administration, clinical services, nursing services, and support services.

4.8.1.1. The DBMS or administrator chairs the committee.

4.8.1.2. The department or section chairperson, the officer in charge (OIC), or his or her senior enlisted member usually serves as the representative for the safety committee.

4.8.2. The safety committee will meet at least every other month with appropriate membership as required by JCAHO, AFOSH 127-8, and AFI 41-203.

4.8.3. The safety committee evaluates safety discrepancies, develops recommendations for corrective action, and makes sure the corrections were put in place and are effective.

4.8.4. The safety committee:

- Oversees accident and injury investigations, ensuring that the MTF quickly reports and resolves dangerous situations that pose a threat to life, health, and property.
- Reviews and approves departmental safety policy.
- Develops MTF safety policies and standards to be implemented when approved by the MTF executive committee.
- Ensures the identification and elimination of hazards through a risk assessment program. The risk assessment program evaluates the risk to patient care and safety of the equipment, buildings, grounds, and internal building system. This risk assessment shall also incorporate any remodeling or construction projects.
- Develops, reviews, and evaluates safety education and fire prevention programs.
- Assesses equipment failures or user errors that result in an incident report and reviews relevant equipment hazard reports.
- Sets policies and procedures for the MTF waste management program and evaluates program effectiveness at least annually.
- Evaluates the MTF safety program annually.

4.9. Fire Protection and Prevention Program:

4.9.1. FM is responsible for fire prevention and protection programs and will work with the various base fire protection services and committees to protect the well-being of patients, staff, and visitors.

4.9.2. AFI 32-2001 governs the overall base fire protection program to prevent fire and reduce loss to personnel, property, and materials. The MTF requires additional protection beyond what the base program provides because sick and bedridden patients can't easily be moved.

4.9.3. The facility manager:

- Establishes a fire prevention and protection program to maintain fire safety in the medical facility.
- Ensures and documents code compliance.
- Carefully reviews design and construction of MTFs.
- Reviews and tests fire warning systems.
- Develops fire protection and evacuation plans.
- Oversees MTF staff education.

NOTE:

In ANG units, the commander or administrator may assign a different individual to assume this responsibility.

4.9.4. Each MTF building that houses patients overnight or where patients receive treatment must comply with the appropriate provisions of NFPA 101 Life Safety Code (LSC) required by the current JCAHO Accreditation Manual.

4.9.4.1. To locate possible LSC violations FM will prepare or have prepared a comprehensive statement of construction describing the characteristics of the fire protection for each building that houses patients overnight.

4.9.4.2. If LSC violations exist, the facility manager will develop a plan of equivalent protection or interim life safety measures, or both, for the facility and decides how to correct these deficiencies. The facility manager coordinates this plan with the base fire department.

4.9.4.3. The facility manager develops and documents an effective inspection process that identifies and maintains the fire protection features required by the LSC standards that apply to the particular type facility (health care or business occupancy).

4.9.4.4. A qualified fire inspector inspects the facility annually for compliance with NFPA standards.

4.9.4.5. The facility manager maintains drawings (or documents) that show the locations of fire protection features in the facility. Update the drawings with every change to the facility and make them available to facility management and BCE personnel.

4.9.5. The facility manager will review the fire safety management program annually and summarizes the program for the MTF safety and executive committees.

4.9.5.1. Documents problems identified in the fire safety program as well as the actions taken to correct the problems in committee minutes and appropriate program folders.

4.9.5.2. The facility manager implements the MTF Commanders smoking policy in accordance with Air Force guidance, limiting smoking to a very few designated areas.

4.9.5.3. The facility manager assesses for NFPA code compliance (flame spread, combustibility, and so on):

- Interior design furnishings that are purchased through the MEMO.
- Wall coverings and carpeting purchased or installed using in-house BCE or contractors.

NOTE:

Use NFPA 101, section 6-5, Interior Finish, as a guide for conducting this review.

4.9.6. FM ensures that the installation, testing, and maintenance of the fire detection and alarm system is according to NFPA 101, chapter 7-6.1.3, AFM 91-37, and the NFPA 72 series standards.

4.9.6.1. FM coordinates with BCE to establish schedules to test, inspect, and maintain all fire alarm and fire detection systems.

4.9.6.2. The BCE conducts the testing. BCE quarterly tests all circuits and annually PMs all components. Activate, on a rotating basis, a single device per circuit each quarter.

4.9.6.3. Safety committee may approve testing circuits less often than once a quarter, but no less than twice a year, based on previous experience of the fire detection system.

4.9.6.4. The facility occupancy classification may require the fire alarm or detection system, when activated, activate devices to minimize smoke transmission. Verify the proper operation of:

- Designated fans.
- Duct system dampers.
- Smoke barrier doors.
- Smoke management systems.

4.9.7. The facility manager ensures all automatic fire extinguishing systems are inspected and tested annually, according to AFM 91-37, *Maintenance of Fire Protection Systems*. Inspect all automatic systems such as computer room halon systems, fire sprinkler systems, and kitchen dry chemical discharge systems.

4.9.7.1. You can often test the system adequately without discharging them by:

- Locking out the actual discharge of the system.
- Testing the electrical control circuitry for proper activation signals.

4.9.7.2. Don't discharge halon or dry chemicals during testing.

4.9.7.3. The facility manager develops a program to manage portable fire extinguishers that incorporates MTF policy for identifying, placing, using, and performing PM on extinguishers. The base fire department trains personnel how to use portable extinguishers.

4.9.7.4. Inspect portable extinguishers quarterly and document this inspection.

4.9.8. The facility manager develops a written fire plan that tells staff exactly how they should respond to a fire emergency. This plan includes:

- The type of fire alarm in the building and its distinctive sound.

- MTF staff responsibilities in the event of fire.
- Departmental responses to fire alarms.
- Number and sections to call to report a fire.
- Evacuation procedures and evacuation responsibility.
- Use of fire extinguishers.
- Assembly areas.
- Staff member education on the fire plan.

4.9.9. The facility manager conducts quarterly fire drills for all MTF personnel on all shifts in all patient care buildings. In ambulatory care buildings or clinics, evacuate the facility during at least two of the fire drills.

4.9.9.1. You may use properly documented actual or false alarms for 50 percent of the required drills for each shift as long as all elements of the fire plan were implemented.

4.9.9.2. Design the fire drills to test how well the MTF staff understands and can use the facility's fire alarm and protection systems.

4.9.9.3. During fire drills, the safety officer or designated evaluator checks:

- Proper alarm transmission.
- Smoke and fire containment procedures.
- Evacuation to refuge areas.
- Fire extinguisher use.
- Evacuation preparation.

4.9.9.4. Document fire drills by stating:

- The date and time of the drill.
- Location.
- Personnel participating (number and sections).
- Staff actions during drill.
- Problems identified.
- Corrective actions taken.
- An overall assessment of drill procedures.

Section 4C—Servicing the MTF's Operational Needs

4.10. Housekeeping:

4.10.1. The facility manager oversees housekeeping functions to see that the responsible personnel (hospital aseptic management system [HAMS] contractor, hospital housekeeping, clinic housekeeping contractor, base cleaning contractor, or facility services contractor) are doing their job effectively and on a timely basis.

4.10.2. The Air Force Medical Support Agency, Medical Logistics Division, Contracting Policy and Operations Branch, HQ AFMSA/SGSLC, 2504 D Drive, Brooks AFB TX 78235-5105, establishes

policies for the housekeeping contracting program and develops the master Performance Work Statement (PWS) for all housekeeping contracts.

4.10.2.1. The HAMS PWS requires the contractor to provide all labor, management support, transportation, equipment, and materials (as specified in the Individual Medical Facility Exhibit (IMFE)) to keep the facility cleaned to contract specifications. Under all housekeeping contracts, the contractor must provide a total clean service as defined in the PWS.

4.10.2.2. Each individual MTF tailors the requirements to that particular facility in an IMFE that adapts the general housekeeping PWS to the individual MTF.

4.10.2.3. You can get the guide for administering the HAMS contract from HQ AFMSA/SGSLC.

4.10.3. The facility manager develops the IMFE for HAMS contracts before contract solicitation. Coordinate the IMFE with key MTF staff members (infection control, nursing services, and hospital or clinic services) before contract solicitation.

4.10.3.1. The Imfe contains:

- Specific descriptions of the facility.
- Room listings.
- The cleaning requirement category of each room.
- Cycle tasks (cleaning of light fixtures, exterior windows, interior of duct covers, walls, drapes, and so on).
- Government furnished facilities, supplies, materials, and equipment.

4.10.3.2. The facility manager ensures that each unique and separate work area within the MTF responsibility (dental clinic, occupational health clinic, and so on) is addressed individually.

4.10.4. The facility manager requests a contract change and forwards it to HQ AFMSA/SGSLC when any HAMS contract changes are required. See AFI 41-120 for change request procedures. Such changes include:

- Additions or deletions of rooms to be cleaned.
- Changes in cleaning frequencies.
- Addition or deletion of cycle tasks.
- Changes in government furnished space or supplies.

4.10.5. The facility manager ensures the contractor provides a total clean service following the guidelines of the contract.

4.10.5.1. The facility manager monitors how well the contractor completes cycle tasks listed in the HAMS contract.

4.10.5.2. Develops local procedures for how hospital or clinic personnel complete AF Form 714, **Customer Complaint Record**.

4.10.5.3. When hospital staff members note a discrepancy, they immediately prepare AF Form 714 and bring it to the FM office.

4.10.5.4. Designated FM personnel validate the discrepancy and ask the contractors' Director of Housekeeping or assistant to correct the discrepancy.

- 4.10.5.5. The QAE for the HAMS contract determines if the contractor sufficiently corrects the discrepancy and if further action is needed.
- 4.10.5.6. Send validated customer complaints, that can not be corrected, to the administering contracting office before the QAE completes the DD Form 250, **Material Inspection and Receiving Report**, which releases payment for monthly services. Authenticate DD Form 250 for contract service billings.
- 4.10.5.7. If hospital staff notice discrepancies after normal duty hours, they bring AF Form 714 to FM at the beginning of the next duty day.
- 4.10.6. FM must be prepared for special cleaning requirements needed for infection control and have contingencies in the event of unusual circumstances.
 - 4.10.6.1. The facility manager ensures that the contractor performs cleaning when and as required by the Infection Control Committee (ICC).
 - 4.10.6.2. The MTF commander and the Resource Manager must approve any tasks that the ICC assigns that are outside the scope of the contract. Otherwise the contractor may make claims for extra work or work outside the scope of the current contract.
 - 4.10.6.3. The facility manager attends the ICC meetings and monthly performance meetings with the administering contracting officer, along with the director of housekeeping, when appropriate.
 - 4.10.6.4. The facility manager develops a contingency plan to provide service if contract services are suspended or terminated because of a labor strike or contractor default.
 - 4.10.6.5. The executive committee reviews this plan annually to ensure that it correlates with other labor related plans.
- 4.10.7. MTFs not using the HAMS contract method obtain a PWS from HQ AFMSA/SGSLC and implement a base-level service contract according to AFI 64-108. See paragraph 4.13. for instructions on service contracting.
 - 4.10.7.1. The local base contracting officer (BCO) can help tailor this PWS to the particular requirements of the facility.
 - 4.10.7.2. Don't use hospital housekeeping or clinic housekeeping PWS to obtain services in critical care "cap and gown" areas.
 - 4.10.7.3. Where applicable use guidelines provided in the "Evaluating Performance" and "Special Considerations" areas for HAMS contracts above.

4.11. Security and Resource Protection:

- 4.11.1. The security and resource protection program protects patients, staff, visitors and their property and minimizes loss, theft, and damage to Air Force resources. The program also maintains law and order during emergency situations.
- 4.11.2. Plan an MTF security and resource protection program according to AFI 31-209, *The Installation and Resources Protection Program*. Because MTFs may be open 24 hours a day with many military and nonmilitary personnel coming and going, the program must be integrated into the MTF operation and understood by personnel for it to be successful.

4.11.3. The facility manager oversees medical facility security. The facility manager coordinates building security plans with the security police and get the base security police to evaluate the program and recommend appropriate security measures.

4.11.4. FM maintains a file with an initial facility evaluation and subsequent annual surveys of resource protection by security police.

4.11.5. An effective security program for a medical facility includes:

- Protecting patients, staff, and visitors, their private property, and Government facilities, equipment, and supplies.
- Involving the administrator in the base Resources Protection Committee System (RPCS).
- Requesting an annual resource protection survey by base security police.
- Following up on recommendations made by security police in their annual survey.
- Appointing a resource protection officer in writing.

4.11.6. The base security police may help the facility manager to plan, coordinate, implement, and monitor a security program. Specific areas to look at are:

4.11.6.1. Proper exit and entrance, parking lot, and sidewalk lighting.

4.11.6.2. Entrance and exit facility traffic flow and procedures to secure entrances after normal duty hours.

4.11.6.3. Protection during disasters per AFI 10-211, *Civil Engineer Contingency Response Planning*. The security program may use MTF personnel as augmentees in a security team in case of disaster. In this case, the safety officer must train the team so they know what to do during a disaster. Give team members distinctive arm bands or other items of clothing so they are easily identifiable in a crowd.

4.11.6.4. Resource protection measures such as security alarm systems, vaults, and safes.

4.11.6.5. Protection of critical systems (such as emergency generators, medical gas supply, fuel supply, or primary electrical distribution systems). Control access to radio base stations, overhead paging systems, and telephone closets.

4.11.6.6. Reported thefts and security protection problems.

4.11.7. Facility managers ensure Intrusion Detection Systems (IDS) are located, installed, and tested, according to AFI 31-209, to protect sensitive or high value medical facility material and equipment that can't be continuously supervised.

4.11.8. Control real property keys and combinations for the MTF by establishing and maintaining a key control program. FM safeguards, issues, documents, inventories, and recovers all keys issued to MTF personnel.

4.11.8.1. Specify which departmental level may issue keys. FM maintains paper files showing who is authorized to receive keys and written receipts for keys issued.

4.11.8.2. The facility manager requires individuals who have keys or combinations to turn in their keys before leaving the facility if they are:

- Directed to PCS.

- Reassigned within the MTF.
- Released from the service.

4.11.9. Institute a program for marking equipment to prevent theft and unauthorized use of Government property. The MEMO marks equipment following procedures in AFMAN 23-110, volume 5, chapter 18.

4.12. Communication Systems:

4.12.1. FM coordinates the acquisition, installation, and maintenance of communications systems in the MTF, except for small computers.

4.12.2. FM processes requests to the base communications squadron, group, or a contractor, as appropriate, for changes in or repair of the medical treatment facility (MTF) communications systems.

4.12.3. Communication systems include:

- Telephone.
- Internal paging system.
- Cabling for local area networks.
- Installed dictation.
- Central alarm.
- Nurse call.
- Closed circuit television.
- Antennas.
- LMR communication systems (radios, pagers, etc.) systems.

4.12.4. Facility managers ensure communication systems can handle the routine and emergency operations of the facility. Where adequate maintenance support is not available, the facility manager may use commercial contract services.

4.12.5. Contact your regional HFO as well as your local communications squadron or group for guidance on acquiring and installing new communication systems including rewiring and cabling.

4.12.6. The DML appoints the facility manager in writing as the LMR net manager.

4.12.6.1. Manage the facility's LMR and its components, including pager systems, according to AFI 33-106, *Land Mobile Radio Management*.

4.12.6.2. The facility manager obtains a copy of the MEMO annual inventory of LMR equipment and prepares inventory lists for base LMR managers.

4.12.6.3. MEMO issues facility equipment (base stations, spare radios, spare pagers, antenna, and so on) to facility management and issues department equipment such as hand held radios, pagers, mobile radios to using area equipment custodians (emergency room, flight medicine, readiness, and departments using pagers).

4.12.6.4. Facility managers coordinate with base communications to establish procedures for maintaining portable and fixed equipment including base stations and antennas.

4.12.6.5. When your facility wants to add to its communication system, meet with the base communication officer who will help you define your base's specific requirements.

4.12.7. The facility managers serves as the focal point for telephone, call system, and paging system repairs. They generate requests for these services according to AFI 33-103. **NOTE:** Most base communication operations have a local regulation. The facility manager must keep a copy of this regulation.

4.12.8. The facility manager develops facility policies and procedures for communication work requests and maintains a communications work request log that details and tracks each request.

4.12.9. The facility manager may represent the MTF on the information systems requirements board (ISRB). If another MTF function performs this duty, the facility manager must provide the representative input on the facility's communication requirements.

4.12.10. The facility manager ensures that communication systems used for issuing instructions during an emergency are powered by the life safety branch of the emergency power system.

4.13. Service Contracting:

4.13.1. Goals and Procedures. Service contracting provides necessary services that cannot be provided by base personnel.

4.13.1.1. FM is authorized to use contract services for items that cannot be maintained by base level organizations. Examples of items that may require maintenance contracts:

- Nurse call systems.
- Medical gas systems.
- Grounds maintenance.
- Regulated medical waste removal and disposal.
- TV antenna systems.

4.13.1.2. FM coordinates all such contracts with BCE or base communications to minimize duplication of services.

4.13.1.3. The DML acquires service contracts through the base contracting office (BCO) according to AFI 64-108, *Base Level Service Contracts*.

4.13.1.4. Service contracts are based on PWSs. FM provides the DML with a PWS written according to AFI 64-108. The PWS describes the essential and technical requirements for items, materials, or services, including how FM will determine whether the contractor has fulfilled the requirements.

4.13.1.5. Facility managers may want to use multiyear contracts written with 1- year options to be exercised at the discretion of the Government.

4.13.2. Service Contract Administration. Quality assurance is based on the minimum surveillance that adequately ensures quality and timely contract performance. It includes corrective measures if contract standards are not met.

4.13.2.1. The facility manager works with contracting to determine the level of QA evaluation required and writes a QA surveillance plan (QASP), if a standard plan is not available. A surveil-

lance plan ensures that the facility uses systematic QA methods and meets the requirements of AFI 64-108.

4.13.2.2. The facility manager nominates a QA evaluator (QAE) according to AFI 64-108 for contracts requiring QA monitoring. (The commander formally appoints the QAE.) Unless the contract is exempted, the facility manager must appoint QAEs for contracts exceeding \$25,000 annually.

4.13.2.3. The facility manager reviews the terms of all contracts on an annual basis to determine if the contract:

- Is still required.
- Meets the needs of the facility.
- Contains the appropriate terms and conditions.

4.13.3. The QAE Program. The program ensures that the Air Force receives quality services and pays only for acceptable services received. Only qualified personnel may evaluate the contractor's performance.

4.13.3.1. The QAE briefs functional area personnel who may have contact with the contractor employees. These employees need to understand the contractual working relationship and avoid any conduct that may allow the contractor to make claims against the Government.

4.13.3.2. The QAE annually reviews the contractor's quality control plan to make sure it covers all aspects of the contract and ensures acceptable performance.

4.13.3.3. The QAE performs all evaluations according to the contract.

4.13.3.4. The QAE must understand the contract and be properly trained to perform their duties.

4.13.3.5. The QAE documents the contractor's performance and contacts the BCO when the performance does not meet contract standards.

4.13.3.6. All personnel involved with the contract must promote good relations between the contracting office, the functional area, and the contractor.

4.13.3.7. The facility manager or QAE informs the contractor about the QAE program and the Air Force's commitment to receive quality and timely services.

4.13.3.8. All QAEs appointed by facility management must attend a base contracting QAE education program offered by BCO within 90 days of their appointment.

Section 4D—Providing for MTF Maintenance, Modification, and Repair

4.14. Responsibilities of the Facility Manager:

4.14.1. The facility manager:

4.14.1.1. Coordinates with BCE to formulate plans, shop drawings, PM, repair, and improvements to the interior and exterior of the MTF. They ensure that these plans meet the needs of the medical department involved and coordinate with BMETs when necessary.

4.14.1.2. Works with the regional HFO, MAJCOM, and BCE to formulate plans for addition, alteration, and replacement MCPs, as well as significant O&M MTF projects. Helps BCE to com-

plete DD Forms 1391, **Military Construction Project Data**, for all projected military construction projects (MCP) projects and minor construction according to AFI 32-1021, *Programming Civil Engineer Resources - Appropriated Fund Resources*. Validates DD Forms 1391 annually with BCE and the MAJCOM Surgeon's Office.

4.14.1.3. Ensures that BCE maintains and tests critical utility systems at appropriate intervals. Ensure maintenance and testing is documented following JCAHO guidelines.

4.14.1.4. Ensures that individuals who use and maintain utility systems get orientation and continuing education. and documents this education. **NOTE:** The facility manager does not necessarily provide this training.

4.14.1.5. Manages the MTF and grounds maintenance programs including:

- Policing of grounds.
- Roads.
- Parking lots.
- Helipads.
- Snow and ice removal.
- Grass and shrubbery care.
- Irrigation systems.
- Pest control within the areas defined by AFI 65-601.

4.14.1.6. Reviews equipment installation plans to determine what facility and utility modifications they require. Confer with the medical equipment maintenance staff to coordinate any unique facility requirements for new equipment, submit proper work orders to BCE, and coordinate with them on the equipment installation.

4.14.1.7. Reviews BCE and other contracted services to ensure adequate support to the facility maintenance program.

4.14.1.8. Serve as a member of the Equipment Review and Authorization Activity (ERAA) and work closely with the MEMO to make sure necessary maintenance, repair, or minor construction projects are completed before new medical equipment arrives.

4.14.2. When outfitting new MCPs, facility managers work closely with the DML and MEMO so equipment can be installed soon after the beneficial occupancy date (BOD).

4.14.3. A MTF representative will attend the Base Facility Utilization Board and the Facility Management Working Group. Executive management should represent the MTF at the Facility Utilization Board, and the facility manager should attend the working group meetings.

4.15. Responsibilities of BCE and FM:

4.15.1. For all MTFs, medical support buildings, and all Real Property Installed Equipment (RPIE) in those buildings, BCE is responsible for:

- The appropriate utilization of facilities.
- Maintenance and repair.
- Minor construction.

- Fire protection services.
- Supply of utilities.

4.15.2. Obtain BCE services according to AFI 32-1031, *Operations Management*, and local BCE policies.

4.15.3. FM serves as the MTF primary focal point for requesting these services, coordinating and monitoring work, and monitoring PM.

4.15.4. FM provides technical input to BCE on medical requirements and priorities and ensures that the MTF has access to the proper documentation to satisfy medical needs and accreditation standards.

4.15.5. FM personnel are not authorized to perform or direct maintenance, repairs, or other activities for which other base agencies or contractors are responsible except for self-help projects that BCE has approved.

4.16. Managing Requests for Work:

4.16.1. The facility manager will develop an MTF guidance and directives for obtaining facility maintenance and repair services. Include methods for contacting BCE after normal duty hours.

4.16.2. FM serves as the MTF point of contact to call job orders into the BCE service call specialist.

4.16.2.1. Use job orders for work that doesn't require detailed planning, including such items as:

- Failed door locking mechanisms and hardware.
- Plumbing maintenance and repairs.
- Fan belt replacement.
- Ceiling leaks.
- Electric outages.

4.16.2.2. Advises BCE if the work qualifies as emergency, urgent, or routine according to AFI 32-1031 based upon medical mission requirements. Provide BCE with a proper job description and correct location when the job order is called in.

4.16.3. Prepare and forward AF Form 332, **Base Civil Engineering Work Request**, to BCE for all work requirements (repairs, maintenance, or minor construction) that require planning, materials, or work by contractors. Complete AF Forms 332 according to the applicable directives and local policy.

4.16.4. Maintain logs and records of all work requests submitted to BCE. Use these logs to check that BCE has completed the job in reasonable time and to report the status of work requests to medical functions and departments.

4.16.5. Coordinate BCE work schedules with the MTF staff when necessary. See that BCE shop personnel or commercial contractors schedule work promptly to minimize disruptions to patient care.

4.16.6. For all outside contractors or BCE maintenance personnel working in the MTF on a temporary basis, maintain a log listing:

- Arrival and departure times.
- Organization or company.
- Job order or purchase order number.

- Individuals' names.
- Destinations within the hospital or clinic.

EXCEPTION: ANG personnel are exempt from this requirement.

4.16.7. Review the BCE Project Contract Management System (PCMS) and the Work Information Management System (WIMS) work order reports, job reports, and contract reports for all medical buildings to monitor the status of all requests. Follow up with BCE where appropriate.

4.16.8. Self help projects, however minor, should be reviewed by and coordinated with BCE for possible impact on the mechanical distribution system.

4.17. Recurring Work Program (RWP):

4.17.1. Include all utility systems that support the patient care environment in the BCE recurring work program in accordance with AFI 32-1031. These systems include:

- Electrical distribution.
- Emergency power.
- Vertical and horizontal transport.
- Heating, ventilating, and air conditioning.
- Plumbing.
- Boiler and steam.
- Medical gas.
- Medical/surgical vacuum.

4.17.2. Make sure BCE establishes regular schedules for:

- Grass cutting and landscaping maintenance.
- Adequate storm drain and pavement cleaning.
- Pest control.
- Refuse collection and disposal.

4.17.3. Review the Recurring Work Program (RWP) annually to answer critical questions:

4.17.3.1. Does the RWP identify recurring maintenance on all items of RPIE that are essential to hospital operations and patient safety? If not, has BCE established maintenance responsibility by other means, such as contract? **NOTE:** AFI 32-9005 defines real property.

4.17.3.2. Are critical items inspected at realistic frequencies? Is the work performed on schedule?

4.17.3.3. Is the frequency of inspection and actions listed on AF Form 1841, **Maintenance Action Sheet (MAS)**, or computer products appropriate for the criticality of the equipment? Do the items listed on the MAS meet the criteria established by the equipment manufacturer?

4.17.3.4. Is documentation of recurring work available? Does the documentation demonstrate that the recurring work program effectively identifies and corrects problems?

4.17.3.5. Do maintenance personnel notify the facility manager or representative before beginning any work that will affect patient safety or support systems vital to operation of the MTF?

4.17.3.6. Do contracts for recurring maintenance on medical gas systems, alarm systems, elevators, and so on contain SOWs and quality assurance plans in keeping with the critical nature of the equipment?

4.18. Reviewing Projects and Programs:

4.18.1. Ensure that the MTF is on BCE's Structural, Maintenance, and Repair Team (SMART) schedule. Know when the SMART team is scheduled to visit the facility and ensure that the SMART team has access to areas requiring maintenance and repair.

4.18.2. Review BCE statements of work (SOW) for maintenance support services that cannot be obtained through installation resources (waste removal, elevator maintenance, duct cleaning, and so on). Obtain the necessary contract services to meet the needs of the MTF in a timely manner.

4.18.2.1. Give the appropriate contract management agency your feedback so it can administer the contracts satisfactorily.

4.18.2.2. Develop and monitor contracts for services not normally provided by BCE according to paragraph 4.13.

4.18.3. Annually, FM reviews O&M management in conjunction with BCE staff to make sure that BCE or contractors provide adequate services. Paragraphs 4.18.3.4. through 4.18.3.12 tell what areas the review and report must cover.

4.18.3.1. The MTF administrator may invite other personnel to participate in the review.

4.18.3.2. During this review, the facility manager checks that BCE properly documents all MTF real property operation, maintenance, repair, and projects. This documentation must comply with current JCAHO Plant, Technology, and Safety Management (PTSM) requirements.

4.18.3.3. The facility manager documents the review in a written report provided to the DML, the administrator, and the MTF safety committee. Send a copy of the report to BCE as a form of feedback.

4.18.3.4. Evaluate the completeness and workability of plans for extended outages (from several hours up to 7 days) of any or all utilities, including:

- Emergency power.
- Horizontal and vertical transport.
- Electric.
- Water and sewage.
- Steam.
- Heating.
- Ventilation.
- Air conditioning.
- Plumbing.
- Medical gas.
- Medical/surgical vacuum.
- Alarm systems.

4.18.3.5. Ensure that BCE Contingency Plans (AFI 10-211) include contingency response to the MTF.

4.18.3.6. Review job training for civil engineering or contractor personnel, as required by JCAHO.

4.18.3.7. Review BCE facility survey files (AFI 32-1031) to determine whether the last survey is current and whether BCE work has been properly identified and prioritized for completion.

4.18.3.8. Assess all building equipment and safety systems to determine whether alterations to an original design have compromised patient safety, according to current standards. **NOTE:** Normally, don't originate a project solely to comply with a contemporary code or standard. However the BCE and MTF staff must take action when the level of risk to patients is unacceptably high, as building systems have become dangerously obsolete relative to NFPA codes and standards.

4.18.3.9. Review the Recurring Work Program (RWP) (in accordance with AFI 32-1031 and paragraph 4.17.).

4.18.3.10. Verify that installed building system blueprints and diagrams accurately indicate emergency shutdown controls for all utility systems are readily available.

4.18.3.11. Review any major building system failure that occurred during the last year and ensure that the problem has been corrected. **NOTE:** After such an incident, the facility manager briefs the MTF Safety Committee on system failures and their resolution at the next meeting.

Section 4E—Planning for the MTF

4.19. Master Plan: Purpose and Scope:

4.19.1. A facility master plan is a long-range planning tool that the facility's executive committee uses to prioritize facility projects necessary for the operation, maintenance, and future development of the MTF.

4.19.1.1. The master plan organizes key information on the long-term operation, maintenance, upgrading, and effective use of the MTF including RPIE.

4.19.1.2. Each hospital and clinic develops and maintains a facility master plan. Update the master plan regularly.

4.19.2. The facility master plan is a single document that identifies requirements, resources, and priorities for 5 years of facility projects. The master plan:

- Provides a coordinated, integrated approach to equipment planning.
- Prepares for compliance with accreditation standards and safety codes, security, and resource protection requirements.
- Helps meet space utilization objectives and energy efficiency goals.
- Prepares for mission changes.
- Helps the facility manager manage maintenance and repair, and minor and major construction projects.
- Serves as a point of reference for MTF executive management, MAJCOM staff assistance teams, and regional health facility officers.

- Shows the relationship of planned facility actions over time to help coordinate related work and avoiding scheduling conflicts.
- 4.19.3. The facility manager solicits input for the facility master plan from:
- The hospital executive committee.
 - The resource manager.
 - The BCE.
 - Base communications.
 - The regional HFO.
- 4.19.4. In developing the plan, the facility manager uses:
- The MTF strategic plan.
 - Staff assistance visit reports.
 - HSI reports.
 - Facility utilization studies.
 - JCAHO accreditation survey results.
 - Resource protection reports.
 - Any other appropriate documentation.
- 4.19.5. The facility manager:
- Posts any changes in status or new requirements to a working copy of the plan as they occur.
 - Coordinates the facility master plan with the director of resource management to ensure that it is consistent with the MTF financial plan.
 - Coordinates the facility master plan with the long-range equipment plan maintained by MEMO to schedule and set priorities for projects that need sites prepare to accommodate new equipment.
 - Coordinates the master plan with the information systems officer to schedule and set priorities for site preparation projects for installing computer hardware and communications equipment.
 - Reviews the master plan quarterly with the administrator to ensure it remains current.
 - Gets approval from the executive committee on these priorities and forwards a copy of the approved plan to MAJCOM/SGA as requested.

4.20. Master Plan: Contents and Organization:

4.20.1. Master Plan. The facility master plan has a table of contents giving pages, tabs, or file names to enable users to quickly find the information they need. The facility master plan may include any other relevant information or reports but include at least the items listed below.

4.20.2. Statement of Construction. For hospitals, include an up-to-date comprehensive statement of construction and fire protection using the JCAHO format. (For accredited MTFs, a copy of the actual statement sent to the JCAHO.)

4.20.3. List of Buildings. Include a list of all buildings assigned to medical use, by building number and functional occupancy. Get this information from the WIMS product, *Selected Inquiry by Organization*, provided by the BCE real estate management office. For each building or its applicable part:

- Indicate the gross square footage and condition code assigned by BCE (AFI 32-1021). Facility managers check to see that condition codes accurately reflect the condition of the building.
- Indicate the dates of the last and next facility survey (AFI 32-1031) and summarize significant findings from the last survey.
- Compare the design to current standards applicable to the type occupancy in NFPA 99 and 101.

4.20.4. Building Systems. Include a list of all building systems and RPIE in the MTF that shows:

- The age of the equipment.
- A brief assessment of condition.
- The normal source of PM and repairs.
- The date last overhauled or rebuilt.
- The estimated fiscal year and cost (by EEIC) for the next replacement or overhaul.

4.20.4.1. You can get a list of building systems and RPIE that are reported in the base RCS from the base real estate management office. (See report HAF LEE (AR) 7115.)

4.20.4.2. The systems listed in the master plan list should include at least:

- Emergency generators.
- Emergency power switch gear.
- Medical/surgical vacuum systems.
- Fire alarm systems.
- Air compressors.
- Elevators.
- Chillers.
- Air handlers.
- Hospital boilers.
- Roofing systems.
- Exhaust fans.
- Public address and paging systems.
- Nurse call communication systems.
- Piped medical gas systems and associated alarms.

4.20.4.3. If the design or performance standards for a system are prescribed in Air Force design criteria (available from the regional HFO) or NFPA 99 or 101, indicate whether the system conforms to those standards, or if not, in what respect it fails to comply. Include projects programmed to bring the systems up to standards.

4.20.5. Facility Project Listing. Include a planned schedule for facility projects by fiscal year and in order of priority, as determined by the executive committee.

4.20.5.1. You may include a copy of the project documents (AF Form 601, AF Form 332, **Base Civil Engineering Work Request**, and DD Forms 1391 **Military Construction Program** and 1391c, **Military Construction Project Data**, in the master plan. If you don't include these documents in the body of the plan, then indicate in which specific file users can find them.

4.20.5.2. For each project on the priority list, provide:

- The title or brief description.
- Estimated cost.
- Type of project.
- Project number or work order number where applicable.
- EEIC.

4.20.5.3. Explain how the MTF will be affected if the project isn't funded, in such areas as:

- Risk management.
- Safety.
- Life safety and fire protection.
- Continuity of operations.
- Mission capability.
- Readiness.
- Energy efficiency.
- Accreditation.
- Planned installation of equipment and computers.
- Professional environment.

4.20.5.4. Facility Project listing must include at least the types of projects listed in paragraphs **4.20.5.5.** through **4.20.5.10.**

4.20.5.5. Construction projects funded by the military construction appropriation (MCA appropriation 3300) and classified:

- As military construction line items (construction projects costing more than \$1,000,000).
- As unspecified or exigent minor construction (class "MC" projects costing between \$300,000 and \$1,000,000 and funded from MCA account P-341).

4.20.5.6. O&M funded projects or project-type initiatives that the MTF seeks to execute during each fiscal year using either EEIC 596, BCE Reimbursables, or EEIC 52X, Facility Projects.

4.20.5.7. RPIE to be funded from the Other Procurement (0130) appropriation (AFI 32-1021).

4.20.5.8. Architect and engineer studies and designs (EEIC 532).

4.20.5.9. Energy Conservation Investment Program (ECIP) projects, including any energy improvements to medical buildings funded through the ECIP portion of the military construction appropriation. **NOTE:** A medical building may be only one of several buildings included in a single, base-wide ECIP project (such as weather-stripping or implementing an energy management and control system [EMCS]).

4.20.5.10. Projects funded through Productivity Enhancing Capital Investments (PECI), including facility projects involving MCA-funded construction, O&M funded minor construction, or site preparation for equipment. These projects may be funded through the Productivity Investment Fund (PIF) or the Component Sponsored Investment Program (CSIP) when eligible and competitive (see AFI 38-301). Identify facility work that is part of a PIF or CSIP project in a separate section of each year's project schedule rather than mixing it in with O&M project schedules.

4.21. Facility Utilization: Responsibilities:

- 4.21.1. The MTF commander and executive committee allocate MTF space to users and departments.
- 4.21.2. The administration identifies space requirements for the delivery of health care and services.
- 4.21.3. FM will:
 - Act on any plans recommended by the commander and executive committee that involve BCE resources or support.
 - Provide an annual report of square feet per section to the resource manager for use in the Medical Expense and Reporting System (MEPRS).
- 4.21.4. The regional health facilities office provides space planning criteria for all medical functional areas and conducts facility utilization surveys.
- 4.21.5. The MTF commander or administrator request a facility utilization survey at least every 5 years. Request them more often when the MTF gains new mission requirements that create space deficits or when existing space is obviously inadequate and can't be corrected without an MCP.

4.22. Facility Utilization: Medical Facility Utilization Board. (MFUB):

- 4.22.1. The administration may set up a MFUB that evaluates space requests and recommends actions to the MTF executive committee to ensure that facility space is allocated effectively.
- 4.22.2. The purposes of the MFUB:
 - Helps the MTF executive committee determine the adequacy of medical support facilities.
 - Ensures that medical facilities are used appropriately.
 - Makes recommendations to eliminate inadequacies, to adjust the medical mission within physical plant constraints, or to pursue major or minor construction projects to alleviate significant space shortfalls.
- 4.22.3. MFUB is Composed of:
 - The administrator who normally chairs the MFUB, but in medical centers or regional hospitals, the associate administrator may chair the board.
 - Senior officers and enlisted representatives from all major functional areas who can assess the impact of space changes within the medical facilities.
 - Representatives from medical equipment maintenance and bioenvironmental engineering also attend to ensure that technical issues are properly addressed unless the MFUB chairman decides that selective attendance is necessary.
- 4.22.4. The tasks of the MFUB:

- Reviews all current and proposed space allocations within facilities designated with real property Category Code 5XX-XXX (all medical).
- Ensures that space is allocated equitably for all MTF operations.
- Integrates HQ USAF/SG facility management goals and standards within MTF strategic plans.
- Reviews and recommends to the executive committee priorities on all projects that require allocation of O&M funds, including projects that fall under BCE reimbursables (EEIC 596) or that require MAJCOM funding (EEIC 52X).
- Reviewing O&M projects that change the use of any space.
- Gets the regional health facilities office and MAJCOM to review and approve projects that change functional capabilities before submitting them to the executive committee for final approval.

4.23. Facility Appearance:

4.23.1. The facility manager develops a long-term plan for maintaining and improving the appearance of the facility. The plan includes:

- Painting.
- Renovating floor covering (tile or carpeting).
- Replacing wall covering.
- Maintaining and renovating of any portion of a medical facility.

4.23.2. The facility manager works with the administrator and executive staff to set standards for signage. The facility manager ensures all types of signs (directional, informational, identification, regulation, and directories) for inside and outside the MTF are purchased and installed.

4.23.2.1. Standardize attractive signs throughout the facility that clearly indicate directions for patients, visitors, and staff.

4.23.2.2. Exterior signs must clearly indicate patient entrances to the facility.

4.23.2.3. Install signs both inside and outside that clearly identify the emergency department or rooms. Clearly mark the route to the emergency department on base roads. Restrict vehicular traffic in the emergency services area so emergency patients can get inside quickly.

4.24. Disaster Planning:

4.24.1. A disaster plan defines what MTF personnel must do in case of either an internal emergency or an external disaster.

4.24.1.1. A "disaster" is any situation that seriously overloads or threatens the routine operation of a MTF.

4.24.1.2. The main objective of disaster planning is to use local resources efficiently. An effective disaster plan prepares the facility manager for dealing with the early phases of an actual disaster.

4.24.1.3. In Air Force MTFs, the disaster plan is known as the Disaster Casualty Control Plan (DCCP) and is maintained by the Medical Readiness Officer/NCO. The DCCP covers all types of

disasters: internal (violent fire or explosion in the facility) and external (transportation accidents or natural disasters).

4.24.1.4. Always consult the facility manager on parts of the DCCP affecting the MTF or its utility systems.

4.24.2. The facility manager is responsible for Annex L - Plant Management Team (facility management annex) of the DCCP.

4.24.2.1. Coordinate the annex with BCE and make sure it corresponds the BCE Contingency Response Plan outlined in AFI 10-211.

4.24.2.2. Review other local DCCP annexes to see what facility support those departments need.

4.24.3. Under a DCCP, the facility manager may be tasked to support:

- Communications, either with the internal telephone system or two-way radio.
- Security and facility access by security police or a designated manpower pool.
- Vehicular traffic control by security police or a designated team.
- Loss of utilities such as electrical distribution, emergency power, water, medical gases and vacuum, steam, HVAC systems, natural gas, vertical and horizontal transportation, and communications.
- Emergency utility shut-off procedures.
- Use of an alternate facility if the primary facility is unusable.

NOTE:

The facility manager must inspect the alternate facility and determine what support it would need to become operational.

4.24.4. Consult medical readiness for details about Annex L to the DCCP. NFPA 99, Annex 1, *Health Care Emergency Preparedness*, may also help you to prepare the plan.

4.25. Energy Conservation Planning:

4.25.1. The facility manager must develop an energy efficiency contingency plan in conjunction with the MTF executive committee. The energy contingency plan must:

- Comply with AFD 23-3.
- Be coordinated with the base energy manager.
- Be updated annually.

4.25.2. Facilities that are not metered refund BCE for estimated energy costs following the policy in AFI 32-1061.

4.25.2.1. Facility managers adjust estimates appropriately when buildings or equipment changes.

4.25.2.2. Facility managers initiate work orders to install utility meters in their facilities if the cost of the meter does not exceed the estimated cost of 1 year's consumption measured by that meter.

4.25.3. Medical facilities that are metered must maintain documents that show the trends of energy usage throughout the year. Use this information to:

- Validate BCE billing for energy usage.
- Estimate future energy bills.
- Develop the energy contingency plan.

4.25.4. MTFs prepare a medical annex to the base or wing contingency plan for reacting to possible energy shortages.

4.25.4.1. The plan gives specific short-term actions for reducing energy consumption by 10 or 20 percent within 15-30 days of notification. The plan assumes a sudden reduction in oil, natural gas, or electricity, and separately identifies measures to reduce consumption in any or all of these sources. Suggestions for how to curtail energy consumption are in AFPD 23-3.

Section 4F—Managing Regulated Medical Waste and Refuse

4.26. General Refuse Responsibilities:

4.26.1. BCE is responsible for solid waste collection and disposal service, not including regulated medical waste, according to AFI 32-1061 and AFP 91-8.

4.26.1.1. BCE determines Air Force requirements for such services and furnishes technical information to base contracting.

4.26.1.2. BCE will then obtain waste receptacles and tell the contractor how often to remove the waste to an appropriate landfill.

4.26.2. Facility managers work with the BCE point of contact (usually in the engineering section of BCE) and ensure that the MTF is included in the base refuse contract.

4.26.2.1. Ensure that BCE has the waste picked up frequently to minimize storage of waste near the MTF.

4.26.2.2. Review refuse pickup contracts to ensure that the base contract meets MTF needs during holidays and after duty hours. Some base contracts may need to include special provisions for the MTF to accommodate the MTF's continuous operation.

4.26.2.3. Consider using trash compactors to reduce the frequency of pickups.

4.26.2.4. The facility manager must know where the general refuse is dumped and what types of waste that landfill will accept.

4.26.3. To conform to applicable local and state laws on waste disposal, the facility manager must inform the BCE QAE for the waste management contract of any local guidance pertaining to medical waste. For example, some landfills accept treated medical waste, some accept treated medical waste in bags of a certain color, and some won't accept medical waste.

4.27. Regulated Medical Waste Responsibilities:

4.27.1. The Air Force definition of medical waste can be obtained from AFMLO and is published periodically in the AFMLL. Bases located in states or regions that define regulated medical waste more stringently must supplement the Air Force definition with the state or local definition

4.27.2. Develop and monitor plans for regulated medical waste. Ask the ICC to review the plan and provide it to the DML for incorporation into the MTF hazardous materials or hazardous waste management plan.

4.27.3. Obtain a current copy of the appropriate state and local law and ensure:

- MTF waste management plan (including how regulated medical waste is defined) complies with these laws.
- A generator permit is obtained if required.
- Any permits needed for incinerators are obtained in coordination with the base environmental services and the base environmental coordinator.

4.27.4. Keep copies of manifests that track disposal of regulated medical waste.

4.27.5. Ensure the director of housekeeping documents all training given to housekeeping personnel.

4.27.6. Meet regularly with housekeeping to ensure that they understand the requirements of the waste management plan.

4.27.7. Make sure that all MTF personnel safely manage regulated medical waste until the waste is disposed of or destroyed.

4.27.8. Budget for any contracts necessary to dispose of regulated medical waste off-site. Develop a SOW to have contractor transport the waste to an EPA-approved destruction facility.

4.27.9. The facility manager will develop contingency plans for disposing of regulated medical waste during emergencies. The plan must include alternative arrangements for the disposal of regulated medical waste in case of equipment failure (incinerator, autoclave, shredder, grinder, and so on) or cancellation of a contract.

4.28. Segregation, Handling and Storage:

4.28.1. Employees within each section must segregate waste into appropriate containers.

4.28.1.1. Medical Waste . Put medical waste into bags of a distinct color or mark it with the universal biohazard symbol.

- *Use red or orange colored bags to identify regulated medical waste.*
- *The bags must be impervious to moisture. When the waste is to be sterilized, use autoclavable bags.*

4.28.1.2. General Waste. Segregate general waste and place it in colored bags.

- *Use a bag color that you can easily distinguish from the one used for regulated medical waste.*
- *Normally brown, black, or clear is used.*

4.28.1.3. Sharps. Place used sharps in rigid, leak-resistant, puncture-resistant, and sealable containers that are distinctively marked with the biohazard symbol.

4.28.1.4. Fluids. Place fluids in quantities greater than 20cc in packaging that is rigid, leak-resistant, and break-resistant.

4.28.2. Housekeeping will collect medical waste in a transport cart, separate from general refuse, and place it in a locked storage area until it is either treated or picked up by a disposal contractor.

4.28.2.1. Ask housekeeping to immediately report inappropriate segregation of trash through the housekeeping supervisor to FM.

4.28.2.2. FM should then work with the section supervisors to correct the situation.

4.28.3. Anyone who spills medical waste must pick it up immediately using proper precautions. Notify housekeeping so it can thoroughly clean the affected area.

4.28.4. The facility manager must control access to the regulated medical waste storage areas.

4.28.5. Storage areas must:

- Maintain the integrity of packaging and protect the waste from water, rain, and wind.
- Store waste so it doesn't smell excessively.
- Be locked to prevent unauthorized access.
- Protect waste from animals and insects.

4.29. On-Site Disposal of Regulated Medical Waste:

4.29.1. If disposal of waste is handled on-site, the facility manager oversees the operation of the disposal device. The facility treats or disposes of regulated medical waste according to federal, state, and local laws and regulation. You can treat medical waste on-site using incineration, sterilization, or grinding and shredding.

4.29.1.1. Incineration. The incinerator must be licensed by local environmental regulators and meet all applicable federal, state, and local laws on levels of stack emissions. The facility must also follow all local laws on proper disposal of ash residue.

4.29.1.2. Sterilization. If local laws permit, you may sterilize medical waste and take it to a sanitary landfill. Use sterilizer tape or other proof of sterilization before sending the waste to the landfill.

If local regulations permit, you may discharge liquid medical waste into the sanitary sewer system.

4.29.1.3. Grinding or Shredding. Units that grind or shred waste use a grinding wheel or pummel hammers to render solid medical waste into unrecognizable pulp. Treat this pulp with an ICC-approved disinfectant or sterilize it during the procedure. Get approval from local environmental regulators and community public works department before discharging grinder or shredder effluent.

4.29.2. If required by Federal or state regulation, each facility must keep a destruction or treatment operating log for each destruction or treatment device. The log includes:

- The date of each treatment or destruction cycle.
- The length of the treatment or destruction cycle.
- The total weight of waste destroyed per destruction cycle.
- An estimate of the weight of regulated medical waste destroyed per destruction cycle.

4.29.3. Facilities submit copies of incinerator destruction reports to the state or Federal agencies requiring such documentation. Keep copies of the destruction reports in official files for 3 years.

4.30. Off-Site Disposal of Regulated Medical Waste:

4.30.1. If you can't treat and dispose of regulated medical waste on-site, it must be packaged for transportation to an off-site disposal facility. The segregation, handling, and storage should be accomplished as outlined in the earlier paragraph.

4.30.2. A facility disposing of its waste off-site, ensures it packages regulated medical waste in containers that are:

- Rigid, leak-resistant, impervious to moisture.
- Strong enough to prevent tearing or bursting under normal conditions of use and handling.
- Sealed to prevent leakage during transport.

4.30.3. Label all untreated containers with the words "Medical Waste" or "Infectious Waste" or display the universal biohazard symbol. You need not label red plastic bags used as inner containers.

4.30.4. Mark each individual container of untreated medical waste being transported off-site with:

- Generator's name.
- Generator's state permit number or address.
- Transporter's name.
- Transporter's state permit or address.

NOTE:

Where required by Federal or state regulations, mark individual sharps and fluid containers with the generator's name and state permit number or address.

4.30.5. The facility manager budgets for this contract and develops an SOW to have a contractor transport the regulated medical waste to an EPA-approved destruction facility. Use the HQ AFMSA/SGSLC sample SOW, AFI 64-108, and this paragraph to develop the SOW.

4.30.6. The facility manager serves as QA monitor for the contract to dispose of regulated medical waste disposal, to ensure that it adheres to all state and local requirements.

4.30.7. Include the following six provisions in the contract:

4.30.7.1. The contractor will prepare a manifest listing all containers and contents picked up. The manifest will be signed by the contractor and a copy returned prior to transport.

4.30.7.2. The waste will be transported in a fully enclosed vehicle (approved by local regulatory authorities to transport regulated medical waste).

4.30.7.3. The contractor will furnish the facility manager with an annotated copy of the manifest showing the date of destruction, means of destruction, and person destroying the waste.

4.30.7.4. The contractor will maintain all required permits relevant to transporting and destruction of regulated medical waste.

4.30.7.5. The contractor will provide in-service training for the employees.

4.30.8. Facilities will follow Federal and state tracking requirements and maintain the forms and manifests as required by Federal and state regulations or for a period of 3 years whichever is greater.

ALEXANDER M. SLOAN, Lt General, USAF, MC
Surgeon General

Attachment 1**GLOSSARY OF REFERENCES, ABBREVIATIONS, AND ACRONYMS*****References***

DODI 4000.19R, *Interservice, Indepartmental, and Interagency Support*, 15 Apr 92

AFCAT 36-2223, *USAF Formal Schools* (formerly AFR 50-5)

AFI 10-211, *Civil Engineer Contingency Response Planning* (AFR 93-2)

AFI 10-403, *Deployment Planning* (formerly AFR 28-4)

AFI 21-113 *Air Force Metrology and Calibration (AFMETCAL) Program* (formerly AFR 74-2)

AFI 25-101, *War Reserve Material (WRM) Policy* (formerly AFR 400-24)

AFI 25-102, *War Reserve Material (WRM) Policy* (formerly AFR 400-24)

AFI 25-201, *Host Tenant Support Responsibilities of US Air Force Organizations* (formerly AFR 11-4)

AFI 31-209, *The Installation and Resources Protection Program* (formerly AFR 125-37)

AFI 32-1021, *Programming Civil Engineer Resources - Appropriated Fund Resources* (formerly AFR 86-1)

AFI 32-1023, *Design and Construction Management* (formerly AFR 89-1)

AFI 32-1031, *Operations Management* (formerly AFR 85-2)

AFI 32-1061, *Utilities Service* (formerly AFR 91-5)

AFI 32-1063, *Operation and Maintenance of Electric Power Systems* (formerly AFR 91-4)

AFI 32-2001, *Fire Protection Program* (formerly AFR 92-1)

AFI 32-9005, *Establishing, Accounting, and Reporting Real Property* (formerly AFR 87-5)

AFI 33-103, *Information Systems Requirements Processing* (formerly AFR 700-3)

AFI 33-106, *Land Mobile Radio Management* (formerly AFR 700-18)

AFI 36-2101, *Military Personnel Classification Policy (Officer and Airmen)* (formerly AFR 35-1)

AFI 36-2201, *Developing Military Training Programs* (formerly AFR 50-9)

AFI 36-2204, *Airman Retraining Program* (formerly AFR 39-4)

AFI 41-104, *Professional Board, National Certification Examinations*, (formerly AFR 169-4)

AFI 37-124, *The Information Collections and Reports (ICR) Management Program; Controlling Internal, Public and Interagency Air Force Information Collections* (formerly AFR 4-38)

AFI 37-138, *Disposition of Air Force Documentation-Policies, Procedures, and Responsibilities* (formerly AFR 12-50)

AFI 38-301, *Productivity Enhancing Capital Investment (PECI) Program* (formerly AFR 25-3)

AFI 41-120, *Administration of Medical Activities* (formerly AFR 168-4)

AFI 41-201, *Clinical Engineering Support* (formerly AFR 167-7)

AFI 41-203, *Electrical Safety in Medical Treatment Facilities* (formerly AFR 160-3)

AFI 41-206, *Review Procedures for High Cost Medical Equipment* (formerly AFR 167-13)

AFI 44-102, *Professional Policies and Procedures* (formerly AFR 160-12)

AFI 44-108, *Infection Control Program* (formerly AFR 160-41)

AFI 44-118, *Administration of Medical Activities* (formerly AFR 168-4)

AFI 44-119, *Quality Assurance and Risk Management in the Air Force Medical Service* (formerly AFR 168-13)

AFI 64-108, *Base Level Service Contracts* (formerly AFR 400-28 and AFR 70-9)

AFI 65-601, *USAF Budget Policies and Procedures* (formerly AFR 172-1)

AFI 65-503, *US Air Force Cost and Planning Factors* (formerly AFR 173-13)

AFI 91-202, *The US Air Force Mishap Prevention Program* (formerly AFR 127-2)

AFI 91-204, *Investigating and Reporting US Air Force Mishaps* (formerly AFR 127-4)

AFI 91-301, *Air Force Occupational Safety, Fire Prevention and Health Program* (formerly AFR 127-12)

AFJI 23-207, *Storage and Handling of Compressed Gases and Liquids in Cylinders, and of Cylinders* (formerly AFR 67-12)

AFM 67-43, *Quality Control Depot Storage Standards*

AFM 85-59, *Preventive/Recurring Maintenance Handbook*

AFM 161-38, *Diagnostic X-ray, Therapeutic X-ray, and Gamma-Beam Protection for Energies up to 10 Million Electron Volts*

AFM 167-230, *Medical Logistics System (MEDLOG): I008/AJ Users' Manual*

AFM 171-200, volume 2, *The Base Engineer Automated Management System (BEAMS)*

AFM 91-37, *Maintenance of Fire Protection Systems*

AFMAN 23-110, volume 5, *Air Force Medical Materiel Management System - General* (formerly AFM 67-1, volume 5)

AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments* (formerly AFR 71-4)

AFOSH 127-8, *Medical Facilities*

AFOSH 127-45, *Hazardous Energy Control and Mishap Prevention Signs and Tags*

AFOSH 127-12, *Machinery*

AFOSH 127-66, *General Industrial Operations*

AFOSH 127-90, *Precision Measurement Equipment Laboratory*

AFOSH 161-9, *Exposure to Radiofrequency Radiation*

AFOSH 161-10, *Exposure to Laser Radiation*

Abbreviations and Acronyms

AAC—Acquisition advice code

AE—Aeromedical evacuation

AFIT—Air Force Institute of Technology

AFMETCAL—Air Force Metrology and Calibration Program

AFMLL—Air Force Medical Logistics Letter

AFMLO—Air Force Medical Logistics Office

AFMLO/FOM—AFMLO-Clinical Engineering Branch

AFMS—Air Force manpower standard

AFPD—Air Force Policy Directive

AFPMEL—Air Force Precision Measurement Equipment Laboratory

AFSC—Air Force specialty code

ANG—Air National Guard

AP—Awaiting parts

ATH—Air transportable hospital

BCAS—Base contracting automated system

BCE—Base civil engineer or engineering

BCO—Base contracting officer

BEAMS—Base engineering management system

BEE—Bioenvironmental engineer

BMET—Biomedical equipment technician

BOD—Beneficial occupancy date

BPA—Blanket purchase agreement

BRR—Revise item master

BSL—Request bench stock balance list

CAGE—Commercial and government entity

CCAF—Community College of the Air Force

CDRH—Center for Devices and Radiological Health

CECORS—Civil Engineering Contract Reporting System

CFR—Code of Federal Regulations

COL—Customer ordering list

CONUS—Continental United States

CSIP—Component sponsored investment program
DBMS—Director of base medical services
DBPA—Decentralized blanket purchase agreement
DCCP—Disaster casualty control plan
DML—Director of medical logistics
DMSA—Depot maintenance support agreement
DoD—Department of Defense
DPSC—Defense Personnel Support Center
DRMO—Defense reutilization and marketing office
ECG—Electrocardiograph
ECIP—Energy conservation investment program
ECRI—Emergency Care Research Institute
EDF—Equipment data file
EEIC—Elements of expense investment codes
EMCS—Energy management and control system
EMR—Establish item master
ERAA—Equipment review and authorization activity
FDA—Food and Drug Administration
FM—Facility management
FMP—Facility master plan
FUB—Facility Utilization Board
FYDP—Future Year Defense Plan
GSA—General Services Administration
HAMS—Hospital aseptic management system
HFO—Health Facility Office
HMR—Historical maintenance record
HSI—Health services inspection
HVAC—Heating, ventilation, and cooling
ICC—Infection control coordinator (committee)
IDS—Intrusion detection system
IMFE—Individual medical facility exhibit
ISRB—Information systems requirements board

JCAHO—Joint Commission on Accreditation of Healthcare Organizations

LMR—Land mobile radio

LSC—Life safety code

LWO—Load historical data

MAJCOM—Major command

MAS—Maintenance action sheet

MCA—Military construction appropriation

MCP—Military construction project

MEDLOG—Medical logistics system

MEMO—Medical equipment management office

MEPRS—Medical expense and performance reporting system

MERC—Medical equipment repair center

MFUB—Medical facility utilization board

MILCON—Military construction

ML—Management data list

MRA—Maximum repair allowance

MSC—Medical Service Corps

MSL—Request maintenance source list

MTF—Medical treatment facility

MWOR—Monthly work order register

MWTA—Medical Waste Tracking Act

NFPA—National Fire Protection Association

NSN—National stock number

O&M—Operation and maintenance

OEHL—Occupational and Environmental Health Laboratory

OI—Operating instruction

OIC—Officer in charge

OSHA—Occupational Safety and Health Administration

PCRI—Post calibration radiation inspection

PDO—Publications Distribution Office

PECI—Productivity enhancing capital investments

PIF—Productivity investment fund

PLL—Prescribed load list
PM—Preventive maintenance
PMEL—Precision Measurement Equipment Laboratory
PS&M—Procurement source and management code
PTSM—Plant, technology, and safety management
PWO—Produce unscheduled work order
PWS—Performance work statement
QA—Quality assurance
QAE—Quality assurance evaluator or evaluation
QA/RM—Quality assurance/risk manager
QASP—Quality assurance surveillance plan
RC—Returned to contractor
RC/CC—Responsibility center/cost center
RMO—Resource management officer
ROD—Report of discrepancy
RPCS—Resources protection committee system
RPIE—Real property installed equipment
RPMC—Real property maintenance by contract
RPSE—Real property similar equipment
RVM—Revise QA maintenance record
RWP—Recurring work program (plan)
SAV—Staff assistance visit
SID—Source-to-image distance (indicators)
SLR—Establish or revise stock control level
SMART—Structural, maintenance, and repair team
SOW—Statement of work
SPG—Spare parts gain
SPI—Spare parts issue
SPL—Spare parts loss
SWO—Print scheduled work order
TA—Table of allowances
TDP—Technical data package

TDY—Temporary duty

UCA—Unit cost accounting

UL—Unable to locate

USAFR—US Air Force Reserve

UTA—Unit training assembly

UWO—Update work order

WIMS—Work information management system

WRM—War reserve materiel

Attachment 2

PUBLICATIONS AND FORMS FOR BIOMEDICAL EQUIPMENT SUPPORT

A2.1. Essential Publications. This paragraph lists publications considered essential to operating an effective biomedical equipment maintenance program. The medical equipment maintenance activity maintains a current file of these publications or must have access to these publications nearby. Managers ensure that maintenance personnel are familiar with each publication. See paragraph A2.3. for sources of these publications.

AFI 41-201, *Clinical Engineering Support* (formerly AFR 167-7)

AFI 44-119, *Quality Assurance and Risk Management in the Air Force Medical Service* (formerly AFR 168-13)

AFMAN 23-110, volume 5, *Air Force Medical Materiel Management System - General* (formerly AFM 67-1, volume 5)

AFM 161-38, *Diagnostic X-ray, Therapeutic X-ray, and Gamma-Beam Protection for Energies up to 10 Million Electron Volts*

AFM 167-230, *Medical Logistics System (MEDLOG): I008/AJ Users' Manual*

AFI 41-203, *Electrical Safety in Medical Treatment Facilities* (formerly AFR 160-3)

AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments* (formerly AFR 71-4)

AFOSH 127-8, *Medical Facilities*

AFOSH 127-45, *Hazardous Energy Control and Mishap Prevention Signs and Tags*

AFMLO Technical Guidance Document 79-2, *Power Supply Evaluations for X-ray System Installations.*

AFMLO Technical Guidance Document 79-4, *Post-Calibration Radiation Inspection Procedure/Fluoroscopic.*

AFMLO Technical Guidance Document 79-5, *Post-Calibration Radiation Inspection Procedure/Radiographic.*

AFMLO Technical Guidance Document 79-6, *Procedures for Performance and Documentation of X-ray Pre-Procurement Technical Surveys.*

AFMLO Technical Guidance Document 80-8, *Reimbursements for X-ray Reinspections (MERCs only).*

Consolidated (AFMLL) Maintenance Briefs.

Maintenance Management for Medical Equipment, AHA Catalog No. 055950,

NFPA 53M - *Fire Hazards in Oxygen Enriched Atmospheres.*

NFPA 70 - *National Electrical Code.*

NFPA 99 - *Standard for Health Care Facilities.*

TM-DPSC-6500-RPL - *Medical Repair Parts Reference List.*

Title 21, *Code of Federal Regulations*, chapter 1, subchapter J.

Applicable MAJCOM regulations, locally developed hospital regulations, operating instructions, standard operating procedures, and calibration procedures prepared and published by each organization.

All copies of Health Devices centrally procured by AFMLO/FOM. Make these journals available for review by equipment users throughout the facility. EXCEPTION: Contingency hospitals need not keep copies of Health Devices with their guidance publications.

ECRI's "Health Devices Inspection and Preventive Maintenance System."

A2.2. Useful Publications. This paragraph lists other publications that may be maintained by the biomedical equipment support section.

AFI 10-403, *USAF Mobility Planning* (formerly AFR 28-4)

AFI 41-120, *Administration of Medical Activities* (formerly AFR 168-4)

AFI 41-206, *Review Procedures for High Cost Medical Equipment* (formerly AFR 167-13)

AFI 44-102, *Professional Policies and Procedures* (formerly AFR 160-12)

AFI 65-503, *US Air Force Cost and Planning Factors* (for calculating manpower costs in x-ray acceptance reinspections) (formerly AFR 173-13)

AFJI 23-207, *Storage and Handling of Compressed Gases and Liquids in Cylinders, and of Cylinders* (formerly AFR 67-12)

AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments* (only for activities responsible for WRM assemblages) (formerly AFR 71-4)

AFOSH 127-12, *Machinery*

AFOSH 127-66, *General Industrial Operations*

AFOSH 127-90, *Precision Measurement Equipment Laboratory*

AFOSH 161-9, *Exposure to Radiofrequency Radiation*

AFOSH 161-10, *Exposure to Laser Radiation*

Air Force Data Dictionary (On-line at HQ SSC/XPSD, Gunter AFB) (formerly AFR 700-20, volume 1)

TO 00-20-14, Air Force Metrology and Calibration Program

TO 00-25-234 - General Shop Practice Requirements for the Repair, Maintenance, and Test of Electronic Equipment

TO 33K-1-100, TMDE Interval Calibration and Repair Reference Guide and Work Unit Code Manual

CGA Pamphlet G-4 - Oxygen

CGA Pamphlet G-4.1 - Cleaning Equipment for Oxygen Service

CGA Pamphlet P-1 - Safe Handling of Compressed Gases in Containers

CGA Pamphlet P-2 - Characteristics and Safe Handling of Medical Gases

CGA Pamphlet, P-2.1 - Recommendations for Medical-Surgical Vacuum Systems in Health Care Facilities

Joint Commission on Accreditation of Healthcare Organizations Accreditation Manual for Hospitals or Ambulatory Health Care Standards Manual

American National Standards Institute (ANSI) 136.1, American National Standard for the Safe Use of Lasers

American National Standards Institute (ANSI) 136.3, American National Standard for the Safe Use of Lasers in Health Care Facilities

A2.3. Where to Get Commercial Publications. This paragraph lists the sources for the commercial publications listed in paragraph A.1.1. Get prices and code revisions in the AFMLL or requesting it from the publishers.

National Fire Protection Association (NFPA) codes and pamphlets: NFPA, Publications Service Department, Batterymarch Park, Quincy MA 02269-9990.

Compressed Gas Association (CGA) pamphlets: Compressed Gas Association, Inc. 1235 Jefferson Davis Highway, Arlington VA 22202, (703) 979-0900.

Title 21, Code of Federal Regulations, chapter 1, subchapter J (CFR 21, parts 800 to 1299): Superintendent of Documents, Government Printing Office, Washington DC 20402. Address requests for assistance on the CFR to the Director, Office of the Federal Register, National Archives and Records Service, Washington DC 20408, (202) 523-3517.

Joint Commission Manuals: Joint Commission on Accreditation of Healthcare Organizations, One Renaissance Boulevard, Oakbrook IL 60181, (708) 916-5600.

ECRI documentation: ECRI, 5200 Butler Pike, Plymouth Meeting PA 19462, (215) 825-6000.

A2.4. Forms Needed for Management. Use these forms to effectively manage a biomedical equipment support organization:

AF Form 55, Employee Safety and Health Record

AF Form 502, Ground Monitor Test Record

AF Form 509, Medical Equipment Maintenance Record

AF Form 538, Personal Clothing and Equipment Record

AF Form 601, Equipment Action Requests

AF Form 765, Hospital Incident Statement

AF Form 979, DANGER TAG

AF Form 980, CAUTION TAG

AF Form 982, DO NOT START

AF Form 1429, Repair Parts Inventory Balance Record

AF Form 1763, Medical Maintenance Work Order

AF Form 2025, Post-Calibration Radiation Inspection Record - Radiographic

AF Form 2026, Post-Calibration Radiation Inspection Record - Fluoroscopic

DA Form 2407, Maintenance Request (Department of the Army Form)

DD Form 1144, Support Agreement

DD Form 1348-1, DoD Single Line Item

DD Form 1574, Serviceable Tag - Materiel

DD Form 1577-1, Unserviceable (Condemned) Label - Materiel

DD Form 1577-2, Unserviceable (Repairable) Tag - Materiel

DD Form 1944, Type "A" Equipment Certification

DD Form 1945, Defective Power Outlet

DD Form 2163, Medical Equipment Verification/Certification

DD Form 2164, X-ray Verification/Certification Worksheet

OF 274, Equipment Warranty

SF 380, Reporting and Processing Medical Materiel Complaint/Quality Improvement Report

AFTO Form 108, TMDE Certification

AFTO Form 350, Repairable Item Processing Tag

AFTO Form 394, TMDE Certification

FDA Form 2579, Report of Assembly of a Diagnostic X-ray System

Attachment 3**MEDICAL DEVICE CODES AND TABLES SHOWING MAINTENANCE SCHEDULES**

A3.1. Table A3.1. lists medical equipment device codes, preventive maintenance and calibration frequencies, national stock number class and life expectancy.

A3.1.1. Calibration and certification source codes used in the SOURCE column of **Table A3.1.**

1 -Local BMET activity.

2 -MERC.

3 -Complexity and requirements of the unit determine whether source is local, MERC, PMEL, or manufacturer.

4 -PMEL.

5 -Manufacturer.

6 -OEHL.

7 -User or operator.

A3.1.1.1. When the table lists more than one calibration source, you may use any of them, if you have enough test equipment and trained personnel.

A3.1.1.2. User or operator may calibrate certain items of clinical laboratory equipment.

A3.1.1.3. PMEL calibrates nonmedical items assigned a device code and a calibration source code "4" according to TO 33K-1-100, Calibration and Repair Technical Order Reference Guide.

A3.2. Preventive maintenance (PM) and calibration (CA) frequency codes:

24 - Biennially

12 - Annually

6 - Semiannually

3 - Quarterly

1 - Monthly

A3.2.3. Follow active frequency schedules for in-use equipment. Follow stored frequency schedules for equipment stored in WRM assemblages.

Table A3.1. Medical Device Codes--Arranged Alphabetically.

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|---|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| ADAPTOMETERS | 651 5 | 10 | 10024 | 12 | 0 | | | |
| AERATORS, ETHYL- ENE OXIDE | 653 0 | 12 | 10045 | 6 | 0 | | | |
| AIR SAMPLERS | 663 0 | 10 | 10051 | 12 | 0 | | | |
| ALARMS, CENTRAL GAS SYSTEMS | 653 0 | 10 | 15824 | 6 | 0 | | | |
| ALCOHOL ANALYZ- ERS | 663 0 | 8 | 15089 | 6 | 0 | | | |
| AMALGAMATORS | 652 0 | 6 | 10082 | 12 | 12 | 1 | 24 | 24 |
| AMINO ACID ANA- LYZERS | 663 0 | 8 | 15090 | 6 | 6 | 1 5 7 | | |
| ANESTHESIA UNIT GAS SCAVENGERS | 651 5 | 10 | 10142 | 6 | 0 | | | |
| ANESTHESIA UNIT VAPORIZERS | 651 5 | 10 | 10144 | 6 | 12 | 1 2 5 | | |
| ANESTHESIA UNIT VENTILATORS | 651 5 | 10 | 10145 | 6 | 6 | 1 2 5 | 12 | 12 |
| ANESTHESIA UNITS | 651 5 | 10 | 10134 | 6 | 6 | 1 2 5 | 12 | 12 |
| ANTIBIOTIC SUSCEP- TIBILITY ANALYZ- ERS | 663 0 | 8 | 15091 | 6 | 6 | 1 5 7 | | |
| ARTICULATORS, DENTAL | 652 0 | 10 | 10201 | 12 | 0 | | | |
| ASPIRATORS (SUC- TION APPARATUS) | 651 5 | 10 | 10208 | 6 | 12 | 1 | 12 | 12 |
| AUDIOMETER CALI- BRATORS | 662 5 | 8 | 90000 | 12 | 12 | 5 | | |
| AUDIOMETERS | 651 5 | 10 | 10228 | 6 | 12 | 2 | | |
| AUDIOMETRIC BOOTHs | 651 5 | 15 | 10229 | 6 | 12 | 2 | | |
| AUTOTRANSFUSION UNITS | 651 5 | 10 | 10239 | 6 | 6 | 1 | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|--|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| BALANCES, ELEC- TRONIC | 667 0 | 10 | 10263 | 12 | 12 | 4 | | |
| BALANCES, ME- CHANICAL | 667 0 | 12 | 10264 | 12 | 12 | 4 | | |
| BASSINETS, MOBILE | 653 0 | 12 | 14030 | 12 | 0 | | | |
| BATHS, PARAFFIN, PHYSICAL THERAPY | 653 0 | 10 | 12956 | 12 | 12 | 1 | | |
| BATHS, SITZ | 653 0 | 10 | 13609 | 12 | 0 | | | |
| BATHS, WHIRLPOOL | 653 0 | 15 | 14450 | 6 | 0 | | 24 | 0 |
| BATHS, WATER | 664 0 | 10 | 15108 | 12 | 12 | 1 7 | 24 | 24 |
| BATTERY CHARGERS | 613 0 | 10 | 17115 | 12 | 0 | | | |
| BEDS, CIRCLE, ELEC- TRIC | 653 0 | 12 | 10345 | 12 | 0 | | | |
| BEDS, ELECTRIC | 653 0 | 12 | 10347 | 12 | 0 | | | |
| BEDS, HYDRAULIC | 653 0 | 12 | 10353 | 12 | 0 | | | |
| BEDS, MECHANICAL | 653 0 | 15 | 10357 | 12 | 0 | | | |
| BEDS, PEDIATRIC | 653 0 | 15 | 10362 | 12 | 0 | | | |
| BILIRUBINOMETERS | 663 0 | 8 | 15109 | 6 | 6 | 1 5 7 | | |
| BIOFEEDBACK SYS- TEMS | 651 5 | 8 | 10396 | 12 | 0 | | | |
| BLENDERS, ELEC- TRIC, LAB [SEE MIX- ERS, CLINICAL LAB] | 664 0 | 10 | 96084 | 12 | 0 | | 24 | 0 |
| BLOOD CELL PRO- CESSORS | 664 0 | 10 | 16857 | 6 | 6 | 1 | 12 | 12 |
| BLOOD CULTURE AN- ALYZER, AUTOMAT- IC | 664 0 | 8 | 15973 | 6 | 6 | | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|-------------------------------------|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| BLOOD FLOW DETECTORS, ULTRASONIC | 651 5 | 10 | 10429 | 6 | 6 | 3 | 12 | 12 |
| BLOOD GAS/PH ANALYZERS | 663 0 | 5 | 15709 | 6 | 6 | 1 5 7 | 12 | 12 |
| BLOOD GLUCOSE MONITOR, PORTABLE | 663 0 | 10 | 16488 | 12 | 12 | 1 5 7 | | |
| BLOOD GROUPING SYSTEMS, AUTOMATED | 663 0 | 9 | 16817 | 6 | 6 | 1 5 7 | | |
| BUFFERS, CORNEAL RUST | 651 5 | 10 | 96085 | 12 | 0 | | 24 | 0 |
| BUN ANALYZERS | 663 0 | 6 | 15092 | 6 | 6 | 1 5 7 | | |
| CABINETS, WARMING | 653 0 | 12 | 10540 | 12 | 0 | | 24 | 0 |
| CAMERAS, FUNDUS | 672 0 | 8 | 10551 | 12 | 0 | | | |
| CAMERAS, IDENTIFICATION, X-RAY FILM | 652 5 | 8 | 10552 | 12 | 0 | | | |
| CAMERAS, SURGICAL | 672 0 | 8 | 10559 | 12 | 0 | | | |
| CAMERAS, ENDOSCOPIC | 651 5 | 8 | 15748 | 12 | 0 | | | |
| CAMERAS, MULTI-IMAGE | 652 5 | 10 | 15823 | 6 | 12 | 3 | | |
| CAMERAS, GAMMA | 652 5 | 8 | 15944 | 6 | 12 | 1 3 5 | | |
| CAMERAS, RADIOGRAPHIC PHOTO-SPOT | 652 5 | 8 | 16418 | 6 | 0 | | | |
| CAMERAS, VIDEO | 582 0 | 8 | 17001 | 12 | 0 | | | |
| CARBON DIOXIDE MONITOR, EXHALED GAS | 663 0 | 10 | 16938 | 6 | 12 | 1 5 7 | | |
| CARBON DIOXIDE ANALYZERS | 663 0 | 5 | 10588 | 6 | 6 | 1 2 7 | | |
| CARBON MONOXIDE ANALYZERS | 663 0 | 8 | 15093 | 6 | 6 | 1 5 7 | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|---|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| CARDIAC OUTPUT UNITS | 651 5 | 8 | 10613 | 6 | 6 | 1 | | |
| CARTS, RESUSCITA- TION | 653 0 | 10 | 10647 | 6 | 0 | | | |
| CAST CUTTERS | 651 5 | 8 | 10655 | 12 | 0 | | 24 | 0 |
| CASTING UNITS, DENTAL | 652 0 | 8 | 10662 | 12 | 12 | 1 | | |
| CELL ANALYZERS | 663 0 | 10 | 16582 | 6 | 12 | 1 5 7 | | |
| CELL SEPARATORS | 664 0 | 8 | 15113 | 6 | 0 | | | |
| CENTRIFUGES | 664 0 | 7 | 10778 | 12 | 12 | 1 7 | 12 | 12 |
| CENTRIFUGES, RE- FRIGERATED | 664 0 | 8 | 15117 | 6 | 6 | 1 | 12 | 12 |
| CHAIRS, DENTAL | 652 0 | 12 | 10792 | 12 | 0 | | | |
| CHAIRS, EXAMINA- TION and TREAT- MENT | 653 0 | 12 | 16437 | 12 | 0 | | 24 | 0 |
| CHAMBER, HYPER- BARIC | 693 0 | 15 | 12061 | 6 | 6 | | | |
| CHLORIDIMETERS | 663 0 | 8 | 15118 | 6 | 12 | 1 7 | | |
| CHROMATOGRAPHY EQUIPMENT | 663 0 | 10 | 15568 | 6 | 6 | 1 5 7 | | |
| CIRCULATORY AS- SIST UNITS, IN- TRA-AORTIC BALLOON | 651 5 | 8 | 10846 | 6 | 6 | 1 | | |
| CLEANERS, DENTAL STEAM | 652 0 | 8 | 96027 | 12 | 0 | | | |
| Cleaners, Bedpan | 653 0 | 20 | 10334 | 0 | 0 | | | |
| CLINICAL CHEMIS- TRY ANALYZERS | 663 0 | 7 | 15551 | 6 | 6 | 1 5 7 | | |
| COAGULATION ANA- LYZERS | 663 0 | 5 | 15552 | 6 | 6 | 1 5 7 | 12 | 12 |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|---|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| COAGULATORS, SON- IC | 651 5 | 10 | 10925 | 6 | 0 | | | |
| COLLIMATORS, X-RAY | 652 5 | 10 | 16389 | 6 | 12 | 1 | | |
| COLOR VISON TESTERS | 654 0 | 10 | 96055 | 12 | 12 | 5 | | |
| COLPOSCOPES | 651 5 | 10 | 10960 | 6 | 0 | | | |
| COMPRESSION UNITS, INTERMIT- TENT | 651 5 | 10 | 10969 | 6 | 0 | | | |
| COMPRESSORS, AIR | 652 0 | 12 | 10972 | 6 | 0 | | 12 | 0 |
| CONDITIONER, HY- DROCOLLOID [SEE 12565] | 652 0 | 10 | 90001 | 12 | 0 | | | |
| COUNTERS, CELL | 664 0 | 7 | 15112 | 6 | 6 | 1 5 7 | 12 | 12 |
| COUNTERS, COLONY | 664 0 | 8 | 15126 | 6 | 6 | 1 5 7 | | |
| COUNTERS, SCINTIL- LATION | 652 5 | 8 | 15184 | 6 | 6 | 1 3 7 | | |
| CRYOGENIC BLOOD- BANKING EQUIP- MENT | 411 0 | 10 | 15127 | 6 | 0 | | | |
| CRYOSURGICAL UNITS | 651 5 | 5 | 11067 | 12 | 12 | 1 5 | 12 | 0 |
| CURING UNITS, DEN- TAL | 652 0 | 8 | 16353 | 12 | 12 | 1 | | |
| CUTTERS, BONE | 651 5 | 10 | 10455 | 6 | 0 | | | |
| CYSTIC FIBROSIS SCREENING DEVICES | 651 5 | 10 | 15128 | 6 | 0 | | | |
| CYSTOURETHRO- SCOPES (GENI- TO-URINARY) | 654 5 | 10 | 11114 | 6 | 0 | | 24 | 0 |
| DATA MANAGEMENT SYSTEMS (LABORA- TORY) | ---- | 10 | 17762 | 0 | 0 | | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|--|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| DEFIBRILLATOR AN- ALYZERS | 662 5 | 8 | 11127 | 12 | 12 | 4 5 | 12 | 12 |
| DEFIBRILLATOR/ MONITOR, AIR EVAC | 651 5 | 8 | 96079 | 3 | 6 | 1 | | |
| DEFIBRILLATOR/ MONITORS | 651 5 | 8 | 11128 | 6 | 12 | 1 2 | 12 | 12 |
| DEMINERALIZERS | 461 0 | 8 | 11145 | 12 | 0 | | 24 | 0 |
| DENSITOMETERS | 652 5 | 7 | 15129 | 6 | 6 | 1 | 12 | 12 |
| DENTAL DELIVERY UNITS | 652 0 | 8 | 11165 | 12 | 0 | | 12 | 0 |
| DENTAL LABORATO- RY EQUIPMENT | 652 0 | 10 | 96054 | 12 | 0 | | | |
| DENTAL TRIMMER | 652 0 | 10 | 96090 | 12 | 12 | | | |
| DENTAL ENGINES | 652 0 | 10 | 11156 | 12 | 0 | | 24 | 0 |
| DERMATOMES | 651 5 | 10 | 11179 | 6 | 0 | | 24 | 0 |
| DIATHERMY UNITS (ULTRASONIC THER- APY) | 653 0 | 12 | 11244 | 6 | 12 | 1 2 | 12 | 12 |
| DILUTERS | 664 0 | 10 | 15133 | 6 | 6 | 1 7 | | |
| DISPENSERS, PARAF- FIN | 664 0 | 10 | 15134 | 12 | 0 | | | |
| DISPENSERS, ICE | 411 0 | 10 | 15912 | 0 | 0 | | 24 | 0 |
| DISTILLING UNITS | 664 0 | 15 | 15136 | 6 | 0 | | 24 | 0 |
| DOSIMETERS, SOUND [USE 16333] | 651 5 | 10 | 96057 | 12 | 12 | 4 5 | 12 | 12 |
| DOSIMETERS | 651 5 | 10 | 16333 | 12 | 12 | 4 5 | 12 | 12 |
| DUPLICATORS, AU- TO, DENTAL | 652 0 | 10 | 96028 | 12 | 0 | | | |
| DYNAMOMETERS | 653 0 | 15 | 15577 | 12 | 0 | | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|---|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| ECG MONITOR ANALYZERS | 651 5 | 5 | 11379 | 12 | 12 | 4 5 | | |
| ELECTRICAL SAFETY ANALYZERS | 662 5 | 8 | 11399 | 12 | 12 | 4 5 | 12 | 12 |
| ELECTROCAUTERY UNITS | 651 5 | 10 | 11418 | 6 | 12 | 1 | 12 | 12 |
| ELECTRO-OCULOGRAPHS | 654 0 | 8 | 11480 | 6 | 0 | | | |
| ELECTROCARDIOGRAPHS, INTERPRETIVE | 651 5 | 8 | 16231 | 12 | 12 | 1 | | |
| ELECTROCARDIOGRAPHS, NONINTERPRETIVE | 651 5 | 10 | 11407 | 12 | 12 | 1 | 12 | 12 |
| ELECTROENCEPHALOGRAPHS | 651 5 | 8 | 11467 | 6 | 6 | 1 | | |
| ELECTROLYTE ANALYZERS, FLAME PHOTOMETER | 663 0 | 7 | 16530 | 6 | 6 | 1 5 7 | 12 | 12 |
| ELECTROLYTE ANALYZERS, NONFLAME | 663 0 | 7 | 15100 | 6 | 6 | 1 5 7 | 12 | 12 |
| ELECTROMYOGRAPHS | 651 5 | 10 | 11474 | 6 | 6 | 1 | | |
| ELECTRONYSTAGMOGRAPHS | 654 0 | 8 | 11479 | 6 | 0 | | | |
| ELECTROPHORESIS EQUIPMENT | 663 0 | 7 | 15138 | 6 | 0 | | | |
| ELECTRORETINOGRAPHS | 654 0 | 8 | 11482 | 6 | 0 | | | |
| ELECTROSURGICAL UNIT ANALYZERS | 662 5 | 10 | 11489 | 12 | 12 | 4 5 | 12 | 12 |
| ELECTROSURGICAL UNITS | 651 5 | 10 | 11490 | 6 | 12 | 1 2 | 12 | 12 |
| EMULSIFIER-ASPIRATORS | 651 5 | 10 | 96029 | 6 | 12 | 1 | | |
| ENDOSCOPES | 651 5 | 10 | 96024 | 6 | 0 | | | |
| ENT TREATMENT UNITS | 651 5 | 12 | 11585 | 12 | 0 | | 12 | 0 |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|-----------------------------------|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| ENZYME ANALYZERS | 663 0 | 5 | 15101 | 6 | 6 | 1 5 7 | | |
| ERGOMETERS, BICYCLE | 653 0 | 15 | 10383 | 12 | 0 | | | |
| ETCHER SYSTEM, DENTAL | 652 0 | 5 | 96076 | 12 | 0 | | | |
| EVOKED POTENTIAL UNITS | 651 5 | 10 | 11614 | 6 | 6 | 1 5 | | |
| EXERCISERS, PHYSICAL THERAPY | 653 0 | 15 | 11623 | 12 | 0 | | | |
| EYE MOVEMENT MONITORS | 654 0 | 10 | 12609 | 12 | 0 | | | |
| FETAL HEART DETECTORS | 651 5 | 8 | 11692 | 12 | 12 | 1 | | |
| FLOWMETER, GAS | 668 0 | 10 | 11748 | 6 | 6 | 1 5 | | |
| FLUORESCENCE IMMUNOASSAY ANALYSER | 665 0 | 8 | 16218 | 6 | 6 | | | |
| FRAMES, TRACTION | 653 0 | 15 | 14101 | 12 | 0 | | | |
| FREEZERS, LABORATORY | 411 0 | 10 | 15145 | 6 | 0 | | 12 | 12 |
| GAS SAMPLING UNITS | 651 5 | 10 | 11848 | 12 | 12 | 3 | | |
| GLUCOSE ANALYZERS | 663 0 | 7 | 15102 | 6 | 6 | 1 5 7 | | |
| GRINDING & POLISHING MACHINES | 652 0 | 15 | 90003 | 12 | 0 | | | |
| GROUND FAULT CIRCUIT INTERRUPTERS | 615 0 | 25 | 11920 | 12 | 0 | | | |
| HEADLIGHTS | 651 5 | 12 | 11963 | 12 | 0 | | | |
| HEARING AID ANALYZERS | 651 5 | 10 | 15633 | 12 | 12 | 5 | | |
| HEART-LUNG BYPASS UNITS | 651 5 | 8 | 11969 | 3 | 3 | 1 5 | | |
| HEAT SEALING MACHINES | 354 0 | 10 | 96086 | 12 | 0 | | 24 | 0 |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|---|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| HEAT TREATING UNITS, OPHTHALMIC | 654 0 | 10 | 96062 | 12 | 0 | | | |
| HEATING PADS, ELECTRIC | 653 0 | 5 | 11989 | 12 | 0 | | | |
| HEMODIALYSIS UNITS | 651 5 | 8 | 11218 | 6 | 6 | 1 5 | | |
| HEMOGLOBINOME- TERS | 663 0 | 8 | 15146 | 6 | 0 | | | |
| HOODS, FUME | 664 0 | 10 | 12022 | 12 | 0 | | | |
| HOODS, ISOLATION, LAMINAR AIR FLOW | 664 0 | 10 | 12025 | 6 | 6 | 5 | | |
| HUMIDIFIERS | 653 0 | 15 | 12047 | 12 | 0 | | | |
| HYPO- and HYPER- THERMIA UNITS | 653 0 | 10 | 12068 | 6 | 12 | 1 | 12 | 12 |
| INCUBATORS, IN- FANTS, NONTRANS- PORT | 653 0 | 10 | 12113 | 6 | 12 | 1 | | |
| INCUBATORS, IN- FANTS, TRANSPORT | 653 0 | 10 | 12114 | 6 | 12 | 1 | | |
| INCUBATORS, AERO- BIC | 664 0 | 10 | 15151 | 6 | 12 | 1 | 24 | 24 |
| INCUBATORS, ANAEROBIC | 664 0 | 10 | 15152 | 6 | 12 | 1 | | |
| INCUBATORS, TEST TUBE | 664 0 | 10 | 15327 | 12 | 12 | 1 | 24 | 0 |
| INCUBATORS, IN- FANTS, AIR EVAC | 653 0 | 10 | 96080 | 3 | 6 | 1 | | |
| INFORMATION STOR- AGE UNITS, OPTICAL DISK | ---- | 10 | 17513 | 0 | 0 | | | |
| INFUSION CONTROL- LERS | 651 5 | 10 | 11010 | 12 | 12 | 1 | | |
| INFUSION PUMP AN- ALYZERS | 651 5 | 5 | 16720 | 12 | 12 | 4 5 | | |
| INFUSION PUMPS | 651 5 | 10 | 13215 | 12 | 12 | 1 | 12 | 12 |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|---|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| INFUSION PUMPS, AIR EVAC | 651 5 | 10 | 96089 | 12 | 12 | 1 | 12 | 12 |
| INFUSION PUMPS, SY- RINGES, OXYTOCIN | 651 5 | 10 | 16167 | 12 | 12 | 1 | | |
| INJECTORS | 651 5 | 10 | 12219 | 12 | 12 | 1 | | |
| INJECTORS, CON- TRAST MEDIA, AN- GIOGRAPHIC | 651 5 | 7 | 15284 | 6 | 6 | 1 | | |
| INJECTORS, CON- TRAST MEDIA, OTH- ER | 651 5 | 7 | 17968 | 6 | 6 | | | |
| INJECTORS, CON- TRAST MEDIA, CT | 651 5 | 7 | 17969 | 6 | 6 | | | |
| INSUFFLATORS | 651 5 | 10 | 12144 | 6 | 0 | | | |
| IRRIGATORS, PERINEAL [SEE 13845, 12306] | 651 5 | 10 | 12996 | 6 | 0 | | | |
| LASERS, SURGICAL | 653 0 | 8 | 15757 | 6 | 12 | 1 3 5 | | |
| LASERS, OPHTHALM- IC | 654 0 | 8 | 16944 | 6 | 12 | 1 3 5 | | |
| LATHES, DENTALS, LABORATORY | 652 0 | 6 | 90004 | 12 | 0 | | | |
| LAVAGE UNITS, DEN- TAL and ORAL | 652 0 | 8 | 12304 | 12 | 0 | | | |
| LAVAGE UNITS, SUR- GICAL | 653 0 | 10 | 12306 | 6 | 0 | | 12 | 0 |
| LENSOMETERS | 654 0 | 10 | 12326 | 12 | 0 | | | |
| LIFTS, PATIENT | 653 0 | 15 | 12330 | 6 | 0 | | | |
| LIGHTBARS, OCULO- MOTOR TESTING | 654 0 | 10 | 96064 | 12 | 0 | | | |
| LIGHTS, EXAMINA- TION | 653 0 | 10 | 12276 | 12 | 0 | | | |
| LIGHTS, INFRARED | 653 0 | 10 | 12278 | 12 | 0 | | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|--|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| LIGHTS, SURGICAL | 653 0 | 12 | 12282 | 6 | 0 | | 12 | 0 |
| LIGHTS, ULTRAVIO- LET | 653 0 | 10 | 12283 | 12 | 0 | | | |
| LIGHTS, DENTAL | 652 0 | 8 | 12351 | 12 | 0 | | | |
| LIGHTS, DENTALS, ACTIVATOR/CURING | 652 0 | 8 | 16386 | 12 | 0 | | | |
| LIGHT SOURCES, FI- BEROPTIC | 651 5 | 10 | 12345 | 6 | 0 | | 24 | 0 |
| LIGHT SOURCES, MI- CROSCOPIC | 665 0 | 10 | 16438 | 12 | 0 | | | |
| LINE ISOLATION MONITOR/GROUND FAULT DETECTOR | 615 0 | 25 | 12361 | 1 | 6 | 1 | | |
| LINEAR ACCELERA- TORS | 652 5 | 8 | 12364 | 3 | 0 | | | |
| LIQUID OXYGEN CONVERTER | 365 5 | 10 | 96073 | 12 | 0 | | | |
| LITHIUM ANALYZER | 663 0 | 8 | 17546 | 6 | 12 | 1 5 7 | | |
| LITHOTRIPTERS | 651 5 | 8 | 16228 | 6 | 6 | | | |
| MAGNETIC RESO- NANCE IMAGERS | 652 5 | 8 | 16260 | 3 | 0 | | | |
| MAGNETS, EYE | 654 0 | 10 | 15269 | 12 | 0 | | 12 | 0 |
| MARKERS, OCULAR | 654 0 | 8 | 12442 | 12 | 0 | | | |
| MEDICAL DIAGNOS- TIC IMAGING SUP- PORT SYSTEMS | ---- | 8 | 93048 | 6 | 6 | | | |
| MEDICAL EQUIP SETS, PHYS EXAM, FLIGHT SURGEON | 654 5 | 10 | 96088 | 12 | 0 | | 24 | 0 |
| MEDICALS, NO-SCHEDULED WORK ORDERS | | 10 | M0001 | 0 | 0 | | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|--------------------------------------|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| MEDICALS, PM AN-NUALLY | | 10 | MMM PA | 12 | 0 | | 24 | 0 |
| MEDICALS, PM MONTHLY | | 10 | MMM PM | 1 | 0 | | 12 | 0 |
| MEDICALS, PM QUARTERLY | | 10 | MMM PQ | 3 | 0 | | 12 | 0 |
| MEDICALS, PM SEMI-ANNUALLY | | 10 | MMM PS | 6 | 0 | | 12 | 0 |
| MERCURY MONI-TORS AND DETEC-TORS | 666 5 | 10 | 16358 | 12 | 0 | | | |
| METABOLISM CARTS (BASAL) | 651 5 | 8 | 10297 | 6 | 12 | 1 | | |
| METERS, LIGHT | 676 0 | 10 | 96059 | 12 | 12 | 4 5 | 24 | 24 |
| MICROSCOPES, OP-ERATING | 665 0 | 10 | 12539 | 6 | 0 | | 12 | 0 |
| MICROSCOPES, LAB-ORATORY | 665 0 | 10 | 15588 | 12 | 0 | | | |
| MICROSCOPES, CON-TACT LENS | 654 0 | 8 | 92043 | 12 | 0 | | | |
| MICROSURGICAL IN-STRUMENTS | 651 5 | 10 | 15621 | 12 | 0 | | | |
| MICROTOMES, CRY-OSTAT | 664 0 | 10 | 15157 | 12 | 0 | | 12 | 0 |
| MICROTOMES, ROTA-RY | 664 0 | 10 | 15158 | 12 | 0 | | 24 | 0 |
| MIDDLE EAR ANA-LYZER (TYMPANOM-ETER) | 651 5 | 10 | 15634 | 12 | 12 | 1 5 | | |
| MIXERS, CLINICAL LAB | 664 0 | 10 | 15161 | 12 | 0 | | 24 | 0 |
| MIXERS, OTHER | 664 0 | 6 | 15590 | 12 | 0 | | 24 | 0 |
| MOIST THERAPY PACK CONDITION-ERS | 653 0 | 10 | 12565 | 12 | 0 | | 24 | 0 |
| MONITOR SYSTEMS, PHYSIOLOGIC | 651 5 | 7 | 12636 | 6 | 12 | 1 | 12 | 12 |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|--|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| MONITORS, APNEA | 651 5 | 8 | 12575 | 6 | 12 | 1 | | |
| MONITORS, ECG | 651 5 | 8 | 12599 | 12 | 12 | 1 | 12 | 12 |
| MONITORS, ECGS, ARRHYTHMIA | 651 5 | 8 | 12601 | 12 | 12 | 1 | | |
| MONITORS, EEG | 651 5 | 8 | 12602 | 12 | 12 | 1 | | |
| MONITORS, FETAL | 651 5 | 8 | 12610 | 6 | 6 | 1 | | |
| MONITORS, HEARTRATE | 651 5 | 8 | 12614 | 12 | 12 | 1 | | |
| MONITORS, PULSE | 651 5 | 8 | 12657 | 12 | 12 | 1 | | |
| MONITORS, RESPIRA- TION | 651 5 | 10 | 12662 | 12 | 12 | 1 | | |
| MONITORS, TEMPER- ATURE | 651 5 | 8 | 12672 | 12 | 12 | 1 | | |
| MONITORS, VIDEOS, MEDICAL | 582 0 | 7 | 15966 | 12 | 0 | | | |
| MULTIGAS MONI- TORS, RESPIRED and ANESTHETIC | 651 5 | 8 | 17445 | 6 | 6 | 1 5 | 7 | |
| NEBULIZERS | 651 5 | 10 | 12712 | 6 | 0 | | | |
| NERVE FUNCTION MONITORS | 651 5 | 7 | 17582 | 6 | 6 | | | |
| NITROGEN ANALYZ- ERS | 663 0 | 8 | 15103 | 6 | 6 | 1 5 7 | | |
| NITROUS OXIDE AN- ALYZERS | 663 0 | 8 | 12768 | 6 | 6 | 1 7 | | |
| NONMEDICAL SAFE- TY, ANNUALLY | | 10 | nnnsa | 12 | 0 | | 24 | 0 |
| NONMEDICAL SAFE- TY, SEMIANNUALLY | | 10 | nnnss | 6 | 0 | | 24 | 0 |
| NONMEDICALS, NOSCHEDULED WORK ORDERS | | 10 | n0001 | 0 | 0 | | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|---|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| NONMEDICALS, CAL- IBRATE ANNUALLY | | 10 | nnnca | 12 | 12 | 3 | 24 | 24 |
| NONMEDICALS, CAL- IBRATE SEMIANNU- ALLY | | 10 | nnncs | 6 | 6 | 3 | 24 | 12 |
| NONMEDICALS, PM ANNUALLY | | 10 | nnnpa | 12 | 0 | | 24 | 0 |
| NONMEDICALS, PM MONTHLY | | 10 | nnnpm | 1 | 0 | | 12 | 0 |
| NONMEDICALS, PM QUARTERLY | | 10 | nnnpq | 3 | 0 | | 12 | 0 |
| NONMEDICALS, PM SEMIANNUALLY | | 10 | nnnps | 6 | 0 | | 12 | 0 |
| OCCUPATIONAL THERAPY EQUIP- MENT | 653 0 | 10 | 96071 | 12 | 0 | | | |
| OCULOPLETHYSMO- GRAPHS | 654 0 | 10 | 12791 | 12 | 0 | | | |
| OPHTHALMOME- TERS, (KERATOME- TERS) | 654 0 | 11 | 12811 | 6 | 0 | | | |
| OPHTHALMOSCOPES | 654 0 | 7 | 12815 | 12 | 0 | | 24 | 0 |
| OPTOMETRY EQUIP- MENT SETS | 654 5 | 10 | 96082 | 12 | 0 | | 24 | 0 |
| ORGAN PRESERVA- TION SYSTEM, FRAC- TURE | 653 0 | 10 | 12826 | 6 | 0 | | | |
| ORTHOPEDIC INTER- NAL FIXATION SYS- TEM, FRACTURE | 651 5 | 5 | 12833 | 12 | 0 | | | |
| OSCILLOSCOPES | 662 5 | 10 | 12839 | 12 | 12 | 4 | 12 | 12 |
| OSMOMETERS | 663 0 | 6 | 12842 | 6 | 6 | 1 7 | | |
| OTOSCOPES | 651 5 | 10 | 12849 | 12 | 0 | | | |
| OVENS, DRYING | 664 0 | 10 | 14410 | 12 | 0 | | 24 | 0 |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|--|----------|-------------|----------------------|----|-----|---------|-----------|--------------|
| OVENS, BURNOUTS, DENTALS, LAB | 652 0 | 6 | 96053 | 12 | 12 | 1 7 | | |
| OXIMETERS, IN VIT- RO, MULTIWAVE- LENGTH (CO-OX) | 651 5 | 7 | 16618 | 12 | 12 | | | |
| OXIMETERS, PULSE | 651 5 | 8 | 17148 | 12 | 12 | | | |
| OXIMETERS (GENER- AL) | 651 5 | 5 | 12853 | 12 | 12 | 1 | 12 | 12 |
| OXYGEN ANALYZ- ERS | 651 5 | 7 | 12858 | 6 | 6 | 1 7 | 12 | 12 |
| OXYGEN CONCEN- TRATORS | 651 5 | 8 | 12873 | 6 | 6 | 1 | | |
| OXYGEN METERS | 663 0 | 8 | 15046 | 6 | 6 | 1 | | |
| OXYGEN-AIR PRO- PORTIONERS, BLENDEES | 651 5 | 10 | 12876 | 12 | 12 | 1 2 5 7 | | |
| OXYGENATORS | 651 5 | 10 | 15592 | 3 | 0 | | | |
| PACEMAKER FUNC- TION ANALYZERS | 651 5 | 8 | 12904 | 6 | 12 | 3 | | |
| PACEMAKER PRO- GRAMMERS | 651 5 | 0 | 15993 | 12 | 12 | 5 | | |
| PACEMAKERS, CAR- DIAC, EXTERNAL | 651 5 | 8 | 12912 | 6 | 12 | 12 | 12 | 12 |
| PERCUSSORS | 651 5 | 8 | 12986 | 12 | 0 | | | |
| PERFORATORS, CRA- NIAL, AUTOMATIC (BONE dRILL) | 651 5 | 10 | 11331 | 12 | 0 | | 12 | 0 |
| PERIMETERS | 654 0 | 10 | 12993 | 12 | 0 | | 24 | 0 |
| PERITONEAL DIALY- SIS UNITS | 651 5 | 8 | 11226 | 6 | 6 | 1 5 | | |
| PH METERS | 663 0 | 10 | 15164 | 6 | 6 | 1 7 | 12 | 12 |
| PHONOCARDIO- GRAPHS | 651 5 | 10 | 13017 | 12 | 12 | 1 2 | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|---|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| PHOROMETERS (PHOROPTERS) | 654 0 | 12 | 17119 | 12 | 0 | | 24 | 0 |
| PHOTOMETERS, RE- FLECTANCE | 663 0 | 10 | 16531 | 6 | 0 | | | |
| PHOTOTACHOME- TERS | 662 5 | 5 | 17714 | 12 | 12 | 4 7 | 24 | 24 |
| PHOTOTHERAPY UNITS | 653 0 | 10 | 13037 | 6 | 0 | | | |
| PHYSIOLOGIC MONI- TORING SYSTEMS, TELEMETRIC | 651 5 | 8 | 13987 | 6 | 6 | 1 3 5 | | |
| PILLCOUNTERS, PHARMACEUTICAL | 653 0 | 10 | 16326 | 12 | 0 | | | |
| PIPETTERS | 664 0 | 5 | 15663 | 6 | 6 | 1 7 | | |
| PLATELET AGGRE- GATION ANALYZERS | 663 0 | 5 | 15104 | 6 | 6 | 1 5 7 | | |
| PNEUMATIC TESTERS | 662 5 | 8 | 13074 | 12 | 12 | 4 5 | 12 | 12 |
| POLISHERS, LENS | 654 0 | 10 | 92038 | 12 | 0 | | | |
| POLYMERIZATOR UNITS | 652 0 | 8 | 96031 | 12 | 0 | | | |
| PORCELAIN FURNAC- ES, DENTAL | 652 0 | 10 | 16356 | 12 | 12 | 1 | | |
| POWER SUPPLIES | 613 0 | 10 | 96011 | 12 | 12 | 4 | 12 | 12 |
| PRESSURE ALARMS, AIRWAY (BREATH- ING CIRCUIT) | 651 5 | 8 | 14351 | 6 | 6 | 1 | | |
| PRESSURE MONI- TORS, GENERAL/IN- VASIVES, BLOOD | 651 5 | 8 | 16764 | 6 | 12 | 1 | | |
| PRESSURE PADS, AL- TERNATING | 653 0 | 8 | 12928 | 6 | 0 | | | |
| PROJECTORS, CHARTS, EYE | 654 0 | 10 | 16890 | 12 | 0 | | 24 | 0 |
| PROJECTORS, CINE | 673 0 | 10 | 17087 | 12 | 0 | | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|--|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| PROPHYLAXIS UNITS, DENTALS, UL- TRASONIC | 652 0 | 6 | 16693 | 12 | 0 | | | |
| PULMONARY FUNC- TION ANALYZERS | 651 5 | 10 | 13182 | 6 | 6 | 1 | | |
| PUMPS, BREAST | 651 5 | 10 | 10485 | 12 | 12 | 1 | | |
| PUMPS, ENTERAL FEEDING | 651 5 | 10 | 13209 | 12 | 12 | 1 | | |
| RADIATION COUNTERS | 666 5 | 8 | 13252 | 6 | 6 | 1 4 5 | | |
| RADIATION MONI- TORS | 666 5 | 8 | 12660 | 6 | 12 | 4 5 | 12 | 12 |
| RADIOMETERS, UL- TRAVIOLET | 652 5 | 8 | 16329 | 12 | 12 | 1 | | |
| RADIOTHERAPY UNITS | 652 5 | 8 | 13279 | 6 | 6 | 1 2 5 | | |
| RECORDERS, CHART | 662 5 | 10 | 10810 | 12 | 0 | | | |
| RECORDERS, ECHOCARDIO- GRAPHIC | 651 5 | 8 | 11385 | 12 | 12 | 1 | | |
| RECORDERS, LONG-TERMS (OTH- ER) | 662 5 | 6 | 12385 | 12 | 0 | | | |
| RECORDERS, LONG-TERMS, ECGS, PORTABLE | 651 5 | 5 | 12388 | 6 | 12 | 1 | | |
| RECORDERS, VIDEO- TAPE | 583 6 | 8 | 13274 | 12 | 0 | | | |
| RECORDERS, VIDEO- DISK | 583 6 | 8 | 16974 | 12 | 0 | | | |
| REFRACTOMETERS, LABORATORY | 665 0 | 10 | 15169 | 6 | 0 | | | |
| REFRACTORS, OPH- THALMOLOGICAL | 654 0 | 10 | 13313 | 12 | 0 | | | |
| REFRIGERATORS, BI- OLOGIC | 411 0 | 10 | 15170 | 6 | 0 | | 24 | 0 |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|---|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| REFRIGERATORS, BLOODBANK | 411 0 | 10 | 15171 | 6 | 6 | 1 | 12 | 12 |
| REGULATORS, HIGH PRESSURES, GAS | 668 0 | 10 | 13323 | 12 | 0 | | | |
| RENAL TRANSPORT UNITS | 651 5 | 8 | 96032 | 6 | 0 | | | |
| RESUSCITATORS, PULMONARIES, GAS-POWERED | 651 5 | 6 | 13366 | 6 | 0 | | | |
| RESUSCITATORS, PULMONARIES, MAN- UAL | 651 5 | 10 | 13367 | 6 | 0 | | | |
| ROTATORS | 664 0 | 10 | 15173 | 12 | 0 | | 24 | 0 |
| SAWS, BONE | 651 5 | 10 | 13449 | 6 | 0 | | 12 | 0 |
| SCALES, AUTOPSY | 667 0 | 12 | 13457 | 12 | 12 | 4 | | |
| SCALES, BED | 667 0 | 15 | 13458 | 12 | 12 | 4 | | |
| SCALES, FLOORS (THERAPEUTIC USE ONLY) | 667 0 | 10 | 13461 | 12 | 12 | 4 | | |
| SCALES, INFANT | 667 0 | 15 | 13462 | 12 | 12 | 4 | | |
| SCALES, LABORATO- RY | 667 0 | 10 | 15175 | 12 | 12 | 1 4 | | |
| SCANNERS, COMPUT- ED TOMOGRAPHY | 652 5 | 5 | 13469 | 3 | 3 | 5 | | |
| SCANNERS, ULTRA- SOUND, DIAGNOSTIC | 651 5 | 8 | 14278 | 6 | 12 | 5 | 12 | 12 |
| SCANNERS, LONG-TERMS RE- CORDING, ECG | 651 5 | 7 | 15295 | 12 | 12 | 1 3 5 | | |
| SCOTOMETERS | 654 0 | 10 | 96074 | 6 | 0 | | | |
| SCREENERS, VISION | 654 0 | 10 | 96033 | 12 | 12 | 1 | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|---------------------------------|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| SENSITOMETERS, RADIOGRAPHIC | 652 5 | 10 | 16563 | 12 | 0 | | | |
| SHAKERS, LABORATORY | 664 0 | 6 | 15178 | 12 | 0 | | 24 | 0 |
| SHARPENERS, DENTAL | 652 0 | 5 | 13550 | 12 | 0 | | | |
| SHARPENERS, MICROTOME KNIFE | 664 0 | 10 | 15179 | 12 | 0 | | 24 | 0 |
| SHARPENERS (OTHER) | 664 0 | 10 | 13549 | 12 | 0 | | | |
| SHOP MACHINERIES, ELECTRIC | 513 0 | 8 | 96013 | 12 | 0 | | 24 | 0 |
| SILVER RECOVERY SYSTEMS | 652 5 | 5 | 15822 | 12 | 0 | | | |
| SIMULATOR, RADIOTHERAPY | 652 5 | 8 | 13280 | 3 | 3 | | | |
| SIMULATORS, ARRHYTHMIA | 651 5 | 7 | 10190 | 12 | 12 | 1 5 | | |
| SIMULATORS, ECG | 651 5 | 10 | 11381 | 12 | 12 | 1 5 | 12 | 12 |
| SINKS, SURGICALSCRUB | 653 0 | 12 | 15936 | 12 | 0 | | | |
| SINKS, PORTABLE | 654 5 | 12 | 16023 | 12 | 0 | | 12 | 0 |
| SLIDE STAINERS | 664 0 | 10 | 15599 | 12 | 0 | | | |
| SLIT LAMPS | 654 0 | 10 | 12281 | 12 | 0 | | 24 | 0 |
| SMOKE EVACUATION SYSTEMS, LASER | 653 0 | 8 | 16262 | 12 | 0 | | | |
| SPECTROPHOTOMETERS | 665 0 | 8 | 15601 | 6 | 6 | 1 5 7 | 12 | 12 |
| SPHYGMOMANOMETERS, ELECTRONIC | 651 5 | 8 | 16157 | 12 | 12 | 1 | | |
| SPHYGMOMANOMETERS, MERCURY | 651 5 | 10 | 16158 | 12 | 0 | | | |
| SPIROMETERS | 651 5 | 8 | 13674 | 6 | 12 | 1 | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|---|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| STEAM GENERATORS | 653 0 | 15 | 96025 | 6 | 0 | | 12 | 0 |
| STERILIZERS, ETHYL- ENE OXIDE | 653 0 | 11 | 13740 | 3 | 12 | 1 | | |
| STERILIZERS, STEAM | 653 0 | 12 | 13746 | 6 | 12 | 1 | 12 | 12 |
| STERILIZERS, VAPOR | 653 0 | 12 | 13748 | 6 | 12 | 1 | | |
| STERILIZERS, INOCU- LATING LOOP | 664 0 | 15 | 16828 | 12 | 12 | 1 | 24 | 0 |
| STERILIZERS, AGAR (DISPENSERS) | 653 0 | 10 | 16911 | 6 | 0 | | | |
| STERILIZERS, DRY HEAT | 653 0 | 12 | 13797 | 6 | 6 | | | |
| STETHOSCOPES, UL- TRASONIC | 651 5 | 7 | 13756 | 12 | 0 | | 12 | 0 |
| STIMULATORS, NEU- ROMUSCULAR | 651 5 | 10 | 13775 | 6 | 12 | 1 | 24 | 24 |
| STIMULATORS, VISU- AL | 651 5 | 8 | 13783 | 6 | 0 | | | |
| STIMULATORS, BONE GROWTH | 651 5 | 10 | 15087 | 6 | 0 | | | |
| STIRRERS | 664 0 | 10 | 15651 | 12 | 0 | | 24 | 0 |
| STRETCHERS | 653 0 | 15 | 13814 | 12 | 0 | | | |
| SUCTION IRRIGA- TORS | 651 5 | 10 | 13845 | 6 | 0 | | | |
| TABLES, EXAMINA- TION AND TREAT- MENT | 653 0 | 15 | 13958 | 12 | 0 | | | |
| TABLES, OBSTETRI- CAL | 653 0 | 15 | 13960 | 6 | 0 | | | |
| TABLES, OPERATING | 653 0 | 12 | 13961 | 6 | 0 | | | |
| TABLES, ORTHOPE- DIC | 653 0 | 15 | 13962 | 6 | 0 | | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|--|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| TABLES, NUCLEAR MEDICINE (SCAN- NING) | 652 5 | 10 | 16599 | 6 | 0 | | | |
| TABLES, PHYSICAL THERAPY | 653 0 | 15 | 13964 | 6 | 0 | | | |
| TABLES, UROLOGI- CAL | 653 0 | 12 | 13969 | 6 | 0 | | | |
| TABLES, OPERATING, ANIMAL | 653 0 | 15 | 96091 | 12 | 0 | | | |
| TACHISTOSCOPES | 654 0 | 9 | 13970 | 12 | 0 | | | |
| TENTS, OXYGEN | 651 5 | 8 | 12893 | 6 | 0 | | | |
| TEST EQUIPMENTS, CALIBRATE ANNU- ALLY | ---- | 5 | tttca | 12 | 12 | 4 5 6 | 12 | 12 |
| TESTERS, PULP | 652 0 | 8 | 13187 | 6 | 0 | | 24 | 0 |
| TESTING UNITS, SOUND PERCEPTION | 651 5 | 10 | 96060 | 12 | 0 | | | |
| THERMOMETERS, ELECTRONIC | 651 5 | 10 | 14032 | 12 | 12 | 1 | 12 | 12 |
| TIMERS | 651 5 | 10 | 14055 | 12 | 12 | 1 | | |
| TISSUE EMBEDDING EQUIPMENT | 664 0 | 10 | 15189 | 6 | 0 | | 12 | 0 |
| TISSUE PROCESSORS | 664 0 | 10 | 15190 | 6 | 0 | | 12 | 0 |
| TITRATORS | 663 0 | 10 | 15191 | 6 | 6 | 1 7 | | |
| TONOMETERS | 654 0 | 10 | 14068 | 12 | 12 | 3 | | |
| TOURNIQUETS, PNEUMATIC | 651 5 | 8 | 14074 | 6 | 6 | 1 | 12 | 12 |
| TRACTION UNITS, IN- TERMITTENT (POW- ERED) | 653 0 | 10 | 14106 | 12 | 12 | 1 | 12 | 12 |
| TRAINING AIDS (MANNIKINS, ETC.) | 691 0 | 10 | 16294 | 0 | 0 | | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|--|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| TRANSCUTANEOUS MONITORS | 651 5 | 7 | 16225 | 12 | 12 | 1 | | |
| TRANSDUCERS | 651 5 | 10 | 14115 | 6 | 12 | 1 5 | | |
| TRANSILLUMINATORS | 651 5 | 12 | 14130 | 12 | 0 | | | |
| TREADMILLS | 653 0 | 8 | 14141 | 6 | 12 | 1 | | |
| TYMPANOMETERS [SEE MIDDLE eAR ANALYZER] | 651 5 | 10 | 96070 | 12 | 12 | 1 5 | | |
| ULTRASONIC CLEANING SYSTEMS | 652 0 | 6 | 14263 | 12 | 0 | | 24 | 0 |
| ULTRASONIC UNIT ANALYZERS | 662 5 | 9 | 14276 | 12 | 12 | 5 | 24 | 24 |
| URINARY COLLECTION UNIT, PRECISION MEASURE | 651 5 | 8 | 15310 | 12 | 12 | 15 | | |
| VACUUM CLEANERS | 791 0 | 8 | 14314 | 12 | 0 | | 24 | 0 |
| VACUUM CLEANERS, PLASTER | 651 5 | 10 | 96087 | 24 | 0 | | 24 | 0 |
| VACUUM FORMERS | 652 0 | 10 | 92041 | 12 | 0 | | | |
| VACUUM MIXING DEVICES, DENTAL | 652 0 | 8 | 16365 | 12 | 0 | | | |
| VECTORCARDIOGRAPHS | 651 5 | 10 | 14345 | 12 | 12 | 3 | | |
| VENTILATORS, RESPIRATORS | 651 5 | 10 | 14360 | 6 | 6 | 1 2 | 12 | 12 |
| VENTILATORS, AIR EVAC | 651 5 | 10 | 96081 | 3 | 6 | 1 | | |
| VIBRATORS, MIXING | 652 0 | 10 | 14369 | 12 | 0 | | | |
| VIEW BOXES, RH TYPING | 664 0 | 10 | 15195 | 12 | 0 | | | |
| VISION TESTERS, STEREOSCOPE | 654 0 | 10 | 96061 | 12 | 0 | | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|------------------------------------|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| VISUAL FUNCTION ANALYZERS | 654 0 | 10 | 14382 | 12 | 0 | | | |
| VITRECTOMY UNITS | 651 5 | 7 | 14386 | 12 | 12 | 1 | | |
| WARMERS, BLOOD | 651 5 | 10 | 10447 | 6 | 6 | 1 | 24 | 24 |
| WARMERS, RADI- ANTS, INFANT | 653 0 | 10 | 13250 | 6 | 12 | 1 | | |
| WARMERS, SOLU- TION | 653 0 | 12 | 13638 | 12 | 12 | 1 | | |
| WARMERS, SLIDES, HISTOLOGY | 664 0 | 10 | 16292 | 12 | 0 | | | |
| WASHERs and /STER- ILIZERS | 653 0 | 12 | 14413 | 6 | 12 | 1 | 12 | 12 |
| WASHERS, CELL | 664 0 | 5 | 15114 | 6 | 6 | 1 | 12 | 12 |
| WASHERS, LABWARE | 664 0 | 8 | 15196 | 12 | 0 | | | |
| WASHERS, CIDEMAT- IC | 664 0 | 9 | 96035 | 12 | 0 | | | |
| WATER TEST KIT | 666 5 | 10 | 96056 | 12 | 0 | | 24 | 0 |
| WELDERS, DENTAL | 652 0 | 8 | 96036 | 12 | 0 | | | |
| X-RAY BRIGHTNESS CONTROLS | 652 5 | 10 | 96075 | 6 | 0 | | | |
| X-RAY CEPHALOM- ETRIC DEVICES | 652 5 | 10 | 96066 | 6 | 0 | | | |
| X-RAY CONTROLS | 652 5 | 10 | 96065 | 6 | 0 | | | |
| X-RAY EQUIPMENT SETS, DENTAL | 654 5 | 10 | 96083 | 12 | 12 | 1 | 12 | 12 |
| X-RAY FILM CAS- SETTE HOLDERS | 652 5 | 10 | 14473 | 6 | 0 | | | |
| X-RAY FILM CHANG- ERS, CASSETTE | 652 5 | 10 | 16590 | 6 | 0 | | | |
| X-RAY FILM CHEMIS- TRY, MIXERS | 652 5 | 8 | 17235 | 12 | 0 | | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|---|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| X-RAY FILM DRYER | 652 5 | 8 | 14475 | 12 | 0 | | | |
| X-RAY FILM DUPLI- CATOR | 652 5 | 8 | 13259 | 12 | 0 | | | |
| X-RAY FILM MANU- AL PROCESSING EQUIPMENT | 652 5 | 15 | 15945 | 6 | 0 | | | |
| X-RAY FILM PROCES- SORS, AUTOMATIC | 652 5 | 8 | 15938 | 6 | 0 | | 12 | 0 |
| X-RAY FILM PROCES- SORS, AUTOMATIC, DENTALS | 652 5 | 6 | 15939 | 6 | 0 | | 12 | 0 |
| X-RAY GENERATORS | 652 5 | 10 | 16602 | 6 | 0 | | | |
| X-RAY HIGH VOLT- AGE DIVIDER SYS- TEMS | 662 5 | 10 | 96006 | 12 | 12 | 5 | 12 | 12 |
| X-RAY IMAGE INTEN- SIFIERS | 652 5 | 8 | 15963 | 6 | 0 | | | |
| X-RAY RAD UNITS, CHEST | 652 5 | 8 | 10822 | 6 | 12 | 1 2 | | |
| X-RAY RAD UNITS, MAMMOGRAPHIC | 652 5 | 10 | 12425 | 6 | 12 | 1 2 | | |
| X-RAY RAD UNITS, DENTAL | 652 5 | 10 | 13269 | 6 | 12 | 1 2 | 12 | 12 |
| X-RAY RAD UNITS, MOBILE | 652 5 | 8 | 13272 | 6 | 12 | 12 | 12 | 12 |
| X-RAY RAD UNITS, TOMOGRAPHIC | 652 5 | 10 | 14059 | 6 | 12 | 12 | | |
| X-RAY RAD/FLUORO UNITS, FIXED | 652 5 | 8 | 11757 | 6 | 12 | 12 | 12 | 12 |
| X-RAY RAD/FLUORO UNITS, MOBILE (C-ARM) | 652 5 | 8 | 11758 | 6 | 12 | 12 | 12 | 12 |
| X-RAY RADUNITS, FIXED | 652 5 | 10 | 13271 | 6 | 12 | 1 2 | | |
| X-RAY ROTOR CON- TROLLER | 652 5 | 10 | 96077 | 6 | 0 | | | |

| NOMENCLATURE | FSC | LIFE EXP | DE- VICE- CODE | PM | CAL | SOURCE | WRM PM | ITEMS CAL |
|--|----------|-------------|----------------------|----|-----|--------|-----------|--------------|
| X-RAY SPOT FILM DEVICE | 652 5 | 10 | 96078 | 6 | 0 | | | |
| X-RAY TABLES (RA- DIOGRAPHIC) | 652 5 | 10 | 16544 | 6 | 0 | | | |
| X-RAY TUBE ASSYS (STANDS & SUSPEN- SION) | 652 5 | 10 | 15975 | 6 | 0 | | | |
| X-RAY TUBES | 652 5 | 10 | 16604 | 6 | 0 | | | |
| X-RAY VIEW BOXES, MOTORIZED | 652 5 | 10 | 16518 | 12 | 0 | | | |
| XERORADIOGRAPH- IC DEVICES | 652 5 | 10 | 14470 | 6 | 12 | 12 | 5 | |

Table A3.2. Medical Device Codes--Arranged by Code Number.

| | | | | | | | | |
|--------------------------------|------|----|-------|----|----|-------|----|----|
| ADAPTOMETERS | 6515 | 10 | 10024 | 12 | 0 | | | |
| AERATORS, ETHYLENE OXIDE | 6530 | 12 | 10045 | 6 | 0 | | | |
| AIR SAMPLERS | 6630 | 10 | 10051 | 12 | 0 | | | |
| AMALGAMATORS | 6520 | 6 | 10082 | 12 | 12 | 1 | 24 | 24 |
| ANESTHESIA UNITS | 6515 | 10 | 10134 | 6 | 6 | 1 2 5 | 12 | 12 |
| ANESTHESIA UNIT GAS SCAVENGERS | 6515 | 10 | 10142 | 6 | 0 | | | |
| ANESTHESIA UNIT VAPORIZERS | 6515 | 10 | 10144 | 6 | 12 | 1 2 5 | | |
| ANESTHESIA UNIT VENTILATORS | 6515 | 10 | 10145 | 6 | 6 | 1 2 5 | 12 | 12 |
| SIMULATORS, ARRHYTHMIA | 6515 | 7 | 10190 | 12 | 12 | 1 5 | | |
| ARTICULATORS, DENTAL | 6520 | 10 | 10201 | 12 | 0 | | | |
| ASPIRATORS (SUCTION APPARATUS) | 6515 | 10 | 10208 | 6 | 12 | 1 | 12 | 12 |
| AUDIOMETERS | 6515 | 10 | 10228 | 6 | 12 | 2 | | |
| AUDIOMETRIC BOOTHS | 6515 | 15 | 10229 | 6 | 12 | 2 | | |
| AUTOTRANSFUSION UNITS | 6515 | 10 | 10239 | 6 | 6 | 1 | | |
| BALANCES, ELECTRONIC | 6670 | 10 | 10263 | 12 | 12 | 4 | | |
| BALANCES, MECHANICAL | 6670 | 12 | 10264 | 12 | 12 | 4 | | |
| METABOLISM CARTS (BASAL) | 6515 | 8 | 10297 | 6 | 12 | 1 | | |
| CLEANERS, BEDPAN | 6530 | 20 | 10334 | 0 | 0 | | | |
| BEDS, CIRCLE, ELECTRIC | 6530 | 12 | 10345 | 12 | 0 | | | |
| BEDS, ELECTRIC | 6530 | 12 | 10347 | 12 | 0 | | | |
| BEDS, HYDRAULIC | 6530 | 12 | 10353 | 12 | 0 | | | |

| | | | | | | | | |
|--|------|----|-------|----|----|-------|----|----|
| BEDS, MECHANICAL | 6530 | 15 | 10357 | 12 | 0 | | | |
| BEDS, PEDIATRIC | 6530 | 15 | 10362 | 12 | 0 | | | |
| ERGOMETER, BICYCLES | 6530 | 15 | 10383 | 12 | 0 | | | |
| BIOFEEDBACK SYSTEMS | 6515 | 8 | 10396 | 12 | 0 | | | |
| BLOOD FLOW DETECTORS, ULTRA-SONIC | 6515 | 10 | 10429 | 6 | 6 | 3 | 12 | 12 |
| WARMERS, BLOOD | 6515 | 10 | 10447 | 6 | 6 | 1 | 24 | 24 |
| CUTTERS, BONE | 6515 | 10 | 10455 | 6 | 0 | | | |
| PUMPS, BREAST | 6515 | 10 | 10485 | 12 | 12 | 1 | | |
| CABINETS, WARMING | 6530 | 12 | 10540 | 12 | 0 | | 24 | 0 |
| CAMERAS, FUNDUS | 6720 | 8 | 10551 | 12 | 0 | | | |
| CAMERAS, IDENTIFICATION, X-RAY-FILM | 6525 | 8 | 10552 | 12 | 0 | | | |
| CAMERAS, SURGICAL | 6720 | 8 | 10559 | 12 | 0 | | | |
| CARBONDIOXIDE ANALYZERS | 6630 | 5 | 10588 | 6 | 6 | 1 2 7 | | |
| CARDIAC OUTPUT UNITS | 6515 | 8 | 10613 | 6 | 6 | 1 | | |
| CARTS, RESUSCITATION | 6530 | 10 | 10647 | 6 | 0 | | | |
| CAST CUTTERS | 6515 | 8 | 10655 | 12 | 0 | | 24 | 0 |
| CASTING UNITS, DENTAL | 6520 | 8 | 10662 | 12 | 12 | 1 | | |
| CENTRIFUGES | 6640 | 7 | 10778 | 12 | 12 | 1 7 | 12 | 12 |
| CHAIRS, DENTAL | 6520 | 12 | 10792 | 12 | 0 | | | |
| RECORDERS, CHART | 6625 | 10 | 10810 | 12 | 0 | | | |
| X-RAY RAD UNITS, CHEST | 6525 | 8 | 10822 | 6 | 12 | 1 2 | | |
| CIRCULATORY ASSISTUNITS, IN-TRA-AORTIC BALLOON | 6515 | 8 | 10846 | 6 | 6 | 1 | | |
| COAGULATORS, SONIC | 6515 | 10 | 10925 | 6 | 0 | | | |
| COLPOSCOPES | 6515 | 10 | 10960 | 6 | 0 | | | |
| COMPRESSION UNITS, INTERMITTENT | 6515 | 10 | 10969 | 6 | 0 | | | |
| COMPRESSORS, AIR | 6520 | 12 | 10972 | 6 | 0 | | 12 | 0 |
| INFUSION CONTROLLERS | 6515 | 10 | 11010 | 12 | 12 | 1 | | |
| CRYOSURGICAL UNITS | 6515 | 5 | 11067 | 12 | 12 | 1 5 | 12 | 0 |
| CYSTOURETHROSCOPES (GENI-TOURINARY) | 6545 | 10 | 11114 | 6 | 0 | | 24 | 0 |
| DEFIBRILLATOR ANALYZERS | 6625 | 8 | 11127 | 12 | 12 | 4 5 | 12 | 12 |
| DEFIBRILLATOR/MONITORS | 6515 | 8 | 11128 | 6 | 12 | 1 2 | 12 | 12 |
| DEMINERALIZERS | 4610 | 8 | 11145 | 12 | 0 | | 24 | 0 |
| DENTAL ENGINES | 6520 | 10 | 11156 | 12 | 0 | | 24 | 0 |
| DENTAL DELIVERY UNITS | 6520 | 8 | 11165 | 12 | 0 | | 12 | 0 |

| | | | | | | | | |
|--|------|----|-------|----|----|-----|----|----|
| DERMATOMES | 6515 | 10 | 11179 | 6 | 0 | | 24 | 0 |
| HEMODIALYSIS UNITS | 6515 | 8 | 11218 | 6 | 6 | 1 5 | | |
| PERITONEAL DIALYSIS UNITS | 6515 | 8 | 11226 | 6 | 6 | 1 5 | | |
| DIATHERMY UNITS (ULTRASONIC THERAPY) | 6530 | 12 | 11244 | 6 | 12 | 1 2 | 12 | 12 |
| PERFORATORS, CRANIAL, AUTOMATIC (BONE DRILL) | 6515 | 10 | 11331 | 12 | 0 | | 12 | 0 |
| ECG MONITOR ANALYZERS | 6515 | 5 | 11379 | 12 | 12 | 4 5 | | |
| SIMULATORS, ECG | 6515 | 10 | 11381 | 12 | 12 | 1 5 | 12 | 12 |
| RECORDERS, ECHOCARDIOGRAPHIC | 6515 | 8 | 11385 | 12 | 12 | 1 | | |
| ELECTRICAL SAFETY ANALYZERS | 6625 | 8 | 11399 | 12 | 12 | 4 5 | 12 | 12 |
| ELECTROCARDIOGRAPHS (NONINTERPRETIVE) | 6515 | 10 | 11407 | 12 | 12 | 1 | 12 | 12 |
| ELECTRO CAUTERY UNITS | 6515 | 10 | 11418 | 6 | 12 | 1 | 12 | 12 |
| ELECTROENCEPHALOGRAPHS | 6515 | 8 | 11467 | 6 | 6 | 1 | | |
| ELECTROMYOGRAPHS | 6515 | 10 | 11474 | 6 | 6 | 1 | | |
| ELECTRONYSTAGMOGRAPHS | 6540 | 8 | 11479 | 6 | 0 | | | |
| ELECTRO-OCULOGRAPHS | 6540 | 8 | 11480 | 6 | 0 | | | |
| ELECTRORETINOGRAPHS | 6540 | 8 | 11482 | 6 | 0 | | | |
| ELECTROSURGICAL UNIT ANALYZERS | 6625 | 10 | 11489 | 12 | 12 | 4 5 | 12 | 12 |
| ELECTROSURGICAL UNITS | 6515 | 10 | 11490 | 6 | 12 | 1 2 | 12 | 12 |
| ENT TREATMENT UNITS | 6515 | 12 | 11585 | 12 | 0 | | 12 | 0 |
| EVOKED POTENTIAL UNITS | 6515 | 10 | 11614 | 6 | 6 | 1 5 | | |
| EXERCISERS (PHYSICAL THERAPY) | 6530 | 15 | 11623 | 12 | 0 | | | |
| FETAL HEART DETECTORS | 6515 | 8 | 11692 | 12 | 12 | 1 | | |
| FLOWMETER, GAS | 6680 | 10 | 11748 | 6 | 6 | 1 5 | | |
| X-RAY RAD/FLUORO UNITS, FIXED | 6525 | 8 | 11757 | 6 | 12 | 12 | 12 | 12 |
| X-RAY RAD/FLUORO UNITS, MOBILE (C-ARM) | 6525 | 8 | 11758 | 6 | 12 | 12 | 12 | 12 |
| GAS SAMPLING UNITS | 6515 | 10 | 11848 | 12 | 12 | 3 | | |
| GROUND FAULT CIRCUIT INTERRUPTERS | 6150 | 25 | 11920 | 12 | 0 | | | |
| HEADLIGHTS | 6515 | 12 | 11963 | 12 | 0 | | | |
| HEART-LUNG BYPASS UNITS | 6515 | 8 | 11969 | 3 | 3 | 1 5 | | |
| HEATING PADS, ELECTRIC | 6530 | 5 | 11989 | 12 | 0 | | | |
| HOODS, FUME | 6640 | 10 | 12022 | 12 | 0 | | | |
| HOODS, ISOLATION, LAMINAR AIR FLOW | 6640 | 10 | 12025 | 6 | 6 | 5 | | |

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| HUMIDIFIERS | 6530 | 15 | 12047 | 12 | 0 | | | |
| Chamber, Hyperbaric | 6930 | 15 | 12061 | 6 | 6 | | | |
| HYPO/HYPERTHERMIA UNITS | 6530 | 10 | 12068 | 6 | 12 | 1 | 12 | 12 |
| INCUBATORS, INFANTS (NONTRANSPORT) | 6530 | 10 | 12113 | 6 | 12 | 1 | | |
| INCUBATORS, INFANTS, TRANSPORT | 6530 | 10 | 12114 | 6 | 12 | 1 | | |
| INSUFFLATORS | 6515 | 10 | 12144 | 6 | 0 | | | |
| INJECTORS | 6515 | 10 | 12219 | 12 | 12 | 1 | | |
| LIGHTS, EXAMINATION | 6530 | 10 | 12276 | 12 | 0 | | | |
| LIGHTS, INFRARED | 6530 | 10 | 12278 | 12 | 0 | | | |
| SLIT LAMPS | 6540 | 10 | 12281 | 12 | 0 | | 24 | 0 |
| LIGHTS, SURGICAL | 6530 | 12 | 12282 | 6 | 0 | | 12 | 0 |
| LIGHTS, ULTRAVIOLET | 6530 | 10 | 12283 | 12 | 0 | | | |
| LAVAGE UNITS, DENTAL/ORAL | 6520 | 8 | 12304 | 12 | 0 | | | |
| LAVAGE UNITS, SURGICAL | 6530 | 10 | 12306 | 6 | 0 | | 12 | 0 |
| LENSOMETERS | 6540 | 10 | 12326 | 12 | 0 | | | |
| LIFTS, PATIENT | 6530 | 15 | 12330 | 6 | 0 | | | |
| LIGHTSOURCES, FIBEROPTIC | 6515 | 10 | 12345 | 6 | 0 | | 24 | 0 |
| LIGHTS, DENTAL | 6520 | 8 | 12351 | 12 | 0 | | | |
| LINE ISOLATION MONITOR/GROUND FAULT DETECTOR | 6150 | 25 | 12361 | 1 | 6 | 1 | | |
| LINEAR ACCELERATORS | 6525 | 8 | 12364 | 3 | 0 | | | |
| RECORDERS, LONG-TERMS (OTHER) | 6625 | 6 | 12385 | 12 | 0 | | | |
| RECORDERS, LONG-TERMS, ECGS, PORTABLE | 6515 | 5 | 12388 | 6 | 12 | 1 | | |
| X-RAY RAD UNITS, MAMMOGRAPHIC | 6525 | 10 | 12425 | 6 | 12 | 1 2 | | |
| MARKERS, OCULAR | 6540 | 8 | 12442 | 12 | 0 | | | |
| MICROSCOPES, OPERATING | 6650 | 10 | 12539 | 6 | 0 | | 12 | 0 |
| MOIST THERAPY PACK CONDITIONERS | 6530 | 10 | 12565 | 12 | 0 | | 24 | 0 |
| MONITORS, APNEA | 6515 | 8 | 12575 | 6 | 12 | 1 | | |
| MONITORS, ECG | 6515 | 8 | 12599 | 12 | 12 | 1 | 12 | 12 |
| MONITORS, ECGS, ARRHYTHMIA | 6515 | 8 | 12601 | 12 | 12 | 1 | | |
| MONITORS, EEG | 6515 | 8 | 12602 | 12 | 12 | 1 | | |
| EYE MOVEMENT MONITORS | 6540 | 10 | 12609 | 12 | 0 | | | |
| MONITORS, FETAL | 6515 | 8 | 12610 | 6 | 6 | 1 | | |
| MONITORS, HEARTRATE | 6515 | 8 | 12614 | 12 | 12 | 1 | | |
| MONITOR SYSTEMS, PHYSIOLOGIC | 6515 | 7 | 12636 | 6 | 12 | 1 | 12 | 12 |

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| MONITORS, PULSE | 6515 | 8 | 12657 | 12 | 12 | 1 | | |
| RADIATION MONITORS | 6665 | 8 | 12660 | 6 | 12 | 4 5 | 12 | 12 |
| MONITORS, RESPIRATION | 6515 | 10 | 12662 | 12 | 12 | 1 | | |
| MONITORS, TEMPERATURE | 6515 | 8 | 12672 | 12 | 12 | 1 | | |
| NEBULIZERS | 6515 | 10 | 12712 | 6 | 0 | | | |
| NITROUS OXIDE ANALYZERS | 6630 | 8 | 12768 | 6 | 6 | 1 7 | | |
| OCULOPLETHYSMOGRAPHS | 6540 | 10 | 12791 | 12 | 0 | | | |
| OPHTHALMOMETERS (KERATOME- TERS) | 6540 | 11 | 12811 | 6 | 0 | | | |
| OPHTHALMOSCOPES | 6540 | 7 | 12815 | 12 | 0 | | 24 | 0 |
| ORGAN PRESERVATION SYSTEM, FRACTURE | 6530 | 10 | 12826 | 6 | 0 | | | |
| ORTHOPEDIC INTERNAL FIXATION SYS, FRACTURE | 6515 | 5 | 12833 | 12 | 0 | | | |
| OSCILLOSCOPES | 6625 | 10 | 12839 | 12 | 12 | 4 | 12 | 12 |
| OSMOMETERS | 6630 | 6 | 12842 | 6 | 6 | 1 7 | | |
| OTOSCOPES | 6515 | 10 | 12849 | 12 | 0 | | | |
| OXIMETERS (GENERAL) | 6515 | 5 | 12853 | 12 | 12 | 1 | 12 | 12 |
| OXYGEN ANALYZERS | 6515 | 7 | 12858 | 6 | 6 | 1 7 | 12 | 12 |
| OXYGEN CONCENTRATORS | 6515 | 8 | 12873 | 6 | 6 | 1 | | |
| OXYGEN-AIR PROPORTIONERS, BLENDERS | 6515 | 10 | 12876 | 12 | 12 | 1 2 5 7 | | |
| TENTS, OXYGEN | 6515 | 8 | 12893 | 6 | 0 | | | |
| PACEMAKER FUNCTION ANALYZERS | 6515 | 8 | 12904 | 6 | 12 | 3 | | |
| PACEMAKERS, CARDIAC, EXTERNAL | 6515 | 8 | 12912 | 6 | 12 | 1 2 | 12 | 12 |
| PRESSURE PADS, ALTERNATING | 6530 | 8 | 12928 | 6 | 0 | | | |
| BATHS, PARAFFIN, PHYSICAL THERA- PY | 6530 | 10 | 12956 | 12 | 12 | 1 | | |
| PERCUSSORS | 6515 | 8 | 12986 | 12 | 0 | | | |
| PERIMETERS | 6540 | 10 | 12993 | 12 | 0 | | 24 | 0 |
| IRRIGATORS, PERINEAL [USE 13845,12306] | 6515 | 10 | 12996 | 6 | 0 | | | |
| PHONOCARDIOGRAPHS | 6515 | 10 | 13017 | 12 | 12 | 1 2 | | |
| PHOTOTHERAPY UNITS | 6530 | 10 | 13037 | 6 | 0 | | | |
| PNEUMATIC TESTERS | 6625 | 8 | 13074 | 12 | 12 | 4 5 | 12 | 12 |
| PULMONARY FUNCTION ANALYZERS | 6515 | 10 | 13182 | 6 | 6 | 1 | | |
| TESTERS, PULP | 6520 | 8 | 13187 | 6 | 0 | | 24 | 0 |
| PUMPS, ENTERAL FEEDING | 6515 | 10 | 13209 | 12 | 12 | 1 | | |
| INFUSION PUMPS | 6515 | 10 | 13215 | 12 | 12 | 1 | 12 | 12 |

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| WARMERS, RADIANTS, INFANT | 6530 | 10 | 13250 | 6 | 12 | 1 | | |
| RADIATION COUNTERS | 6665 | 8 | 13252 | 6 | 6 | 1 4 5 | | |
| X-RAY FILM DUPLICATOR | 6525 | 8 | 13259 | 12 | 0 | | | |
| X-RAY RAD UNITS, DENTAL | 6525 | 10 | 13269 | 6 | 12 | 1 2 | 12 | 12 |
| X-RAY RADUNITS, FIXED | 6525 | 10 | 13271 | 6 | 12 | 1 2 | | |
| X-RAY RAD UNITS, MOBILE | 6525 | 8 | 13272 | 6 | 12 | 12 | 12 | 12 |
| RECORDERS, VIDEOTAPE | 5836 | 8 | 13274 | 12 | 0 | | | |
| RADIOTHERAPY UNITS | 6525 | 8 | 13279 | 6 | 6 | 1 2 5 | | |
| SIMULATOR, RADIOTHERAPY | 6525 | 8 | 13280 | 3 | 3 | | | |
| REFRACTORS, OPHTHALMOLOGICAL | 6540 | 10 | 13313 | 12 | 0 | | | |
| REGULATORS, HIGH PRESSURES, GAS | 6680 | 10 | 13323 | 12 | 0 | | | |
| RESUSCITATORS, PULMONARYS, GAS-POWERED | 6515 | 6 | 13366 | 6 | 0 | | | |
| RESUSCITATORS, PULMONARYS, MANUAL | 6515 | 10 | 13367 | 6 | 0 | | | |
| SAWS, BONE | 6515 | 10 | 13449 | 6 | 0 | | 12 | 0 |
| SCALES, AUTOPSY | 6670 | 12 | 13457 | 12 | 12 | 4 | | |
| SCALES, BED | 6670 | 15 | 13458 | 12 | 12 | 4 | | |
| SCALES, FLOORS (THERAPEUTIC USE ONLY) | 6670 | 10 | 13461 | 12 | 12 | 4 | | |
| SCALES, INFANT | 6670 | 15 | 13462 | 12 | 12 | 4 | | |
| SCANNERS, COMPUTED TOMOGRAPHY | 6525 | 5 | 13469 | 3 | 3 | 5 | | |
| SHARPENERS (OTHER) | 6640 | 10 | 13549 | 12 | 0 | | | |
| SHARPENERS, DENTAL | 6520 | 5 | 13550 | 12 | 0 | | | |
| BATHS, SITZ | 6530 | 10 | 13609 | 12 | 0 | | | |
| WARMERS, SOLUTION | 6530 | 12 | 13638 | 12 | 12 | 1 | | |
| SPIROMETERS | 6515 | 8 | 13674 | 6 | 12 | 1 | | |
| STERILIZERS, ETHYLENE OXIDE | 6530 | 11 | 13740 | 3 | 12 | 1 | | |
| STERILIZERS, STEAM | 6530 | 12 | 13746 | 6 | 12 | 1 | 12 | 12 |
| STERILIZERS, VAPOR | 6530 | 12 | 13748 | 6 | 12 | 1 | | |
| STETHOSCOPES, ULTRASONIC | 6515 | 7 | 13756 | 12 | 0 | | 12 | 0 |
| STIMULATORS, NEUROMUSCULAR | 6515 | 10 | 13775 | 6 | 12 | 1 | 24 | 24 |
| STIMULATORS, VISUAL | 6515 | 8 | 13783 | 6 | 0 | | | |
| STERILIZERS, DRY HEAT | 6530 | 12 | 13797 | 6 | 6 | | | |
| STRETCHERS | 6530 | 15 | 13814 | 12 | 0 | | | |
| SUCTION IRRIGATORS | 6515 | 10 | 13845 | 6 | 0 | | | |
| TABLES, EXAMINATION/TREATMENT | 6530 | 15 | 13958 | 12 | 0 | | | |

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| TABLES, OBSTETRICAL | 6530 | 15 | 13960 | 6 | 0 | | | |
| TABLES, OPERATING | 6530 | 12 | 13961 | 6 | 0 | | | |
| TABLES, ORTHOPEDIC | 6530 | 15 | 13962 | 6 | 0 | | | |
| TABLES, PHYSICAL THERAPY | 6530 | 15 | 13964 | 6 | 0 | | | |
| TABLES, UROLOGICAL | 6530 | 12 | 13969 | 6 | 0 | | | |
| TACHISTOSCOPES | 6540 | 9 | 13970 | 12 | 0 | | | |
| PHYSIOLOGIC MONITORING SYS- TEMS, TELEMETRIC | 6515 | 8 | 13987 | 6 | 6 | 1 3 5 | | |
| BASSINETS, MOBILE | 6530 | 12 | 14030 | 12 | 0 | | | |
| THERMOMETERS, ELECTRONIC | 6515 | 10 | 14032 | 12 | 12 | 1 | 12 | 12 |
| TIMERS | 6515 | 10 | 14055 | 12 | 12 | 1 | | |
| X-RAY RAD UNITS, TOMOGRAPHIC | 6525 | 10 | 14059 | 6 | 12 | 12 | | |
| TONOMETERS | 6540 | 10 | 14068 | 12 | 12 | 3 | | |
| TOURNIQUETS, PNEUMATIC | 6515 | 8 | 14074 | 6 | 6 | 1 | 12 | 12 |
| FRAMES, TRACTION | 6530 | 15 | 14101 | 12 | 0 | | | |
| TRACTION UNITS, INTERMITTENT (POWERED) | 6530 | 10 | 14106 | 12 | 12 | 1 | 12 | 12 |
| TRANSDUCERS | 6515 | 10 | 14115 | 6 | 12 | 1 5 | | |
| TRANSILLUMINATORS | 6515 | 12 | 14130 | 12 | 0 | | | |
| TREADMILLS | 6530 | 8 | 14141 | 6 | 12 | 1 | | |
| ULTRASONIC CLEANERS [USE 14263] | 6520 | 6 | 14262 | 12 | 0 | | 24 | 0 |
| ULTRASONIC CLEANING SYSTEMS | 6520 | 6 | 14263 | 12 | 0 | | 24 | 0 |
| ULTRASONIC UNIT ANALYZERS | 6625 | 9 | 14276 | 12 | 12 | 5 | 24 | 24 |
| SCANNERS, ULTRASOUND (DIAG- NOSTIC) | 6515 | 8 | 14278 | 6 | 12 | 5 | 12 | 12 |
| VACUUM CLEANERS | 7910 | 8 | 14314 | 12 | 0 | | 24 | 0 |
| VECTORCARDIOGRAPHS | 6515 | 10 | 14345 | 12 | 12 | 3 | | |
| PRESSURE ALARMS, AIRWAY (BREATHING CIRCUIT) | 6515 | 8 | 14351 | 6 | 6 | 1 | | |
| VENTILATORS, RESPIRATORS | 6515 | 10 | 14360 | 6 | 6 | 1 2 | 12 | 12 |
| VIBRATORS, MIXING | 6520 | 10 | 14369 | 12 | 0 | | | |
| VISUAL FUNCTION ANALYZERS | 6540 | 10 | 14382 | 12 | 0 | | | |
| VITRECTOMY UNITS | 6515 | 7 | 14386 | 12 | 12 | 1 | | |
| OVENS, DRYING | 6640 | 10 | 14410 | 12 | 0 | | 24 | 0 |
| WASHER/STERILIZERS | 6530 | 12 | 14413 | 6 | 12 | 1 | 12 | 12 |
| BATHS, WHIRLPOOL | 6530 | 15 | 14450 | 6 | 0 | | 24 | 0 |
| XERORADIOGRAPHIC DEVICES | 6525 | 10 | 14470 | 6 | 12 | 12 | 5 | |
| X-RAY FILM CASSETTE HOLDERS | 6525 | 10 | 14473 | 6 | 0 | | | |

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| X-RAY FILM DRYER | 6525 | 8 | 14475 | 12 | 0 | | | |
| OXYGEN METERS | 6630 | 8 | 15046 | 6 | 6 | 1 | | |
| STIMULATORS, BONE GROWTH | 6515 | 10 | 15087 | 6 | 0 | | | |
| ALCOHOL ANALYZERS | 6630 | 8 | 15089 | 6 | 0 | | | |
| AMINO ACID ANALYZERS | 6630 | 8 | 15090 | 6 | 6 | 1 5 7 | | |
| ANTIBIOTIC SUSCEPTIBILITY ANALYZERS | 6630 | 8 | 15091 | 6 | 6 | 1 5 7 | | |
| BUN ANALYZERS | 6630 | 6 | 15092 | 6 | 6 | 1 5 7 | | |
| CARBONMONOXIDE ANALYZERS | 6630 | 8 | 15093 | 6 | 6 | 1 5 7 | | |
| ELECTROLYTE ANALYZERS (NON-FLAME) | 6630 | 7 | 15100 | 6 | 6 | 1 5 7 | 12 | 12 |
| ENZYME ANALYZERS | 6630 | 5 | 15101 | 6 | 6 | 1 5 7 | | |
| GLUCOSE ANALYZERS | 6630 | 7 | 15102 | 6 | 6 | 1 5 7 | | |
| NITROGEN ANALYZERS | 6630 | 8 | 15103 | 6 | 6 | 1 5 7 | | |
| PLATELET AGGREGATION ANALYZERS | 6630 | 5 | 15104 | 6 | 6 | 1 5 7 | | |
| BATHS, WATER | 6640 | 10 | 15108 | 12 | 12 | 1 7 | 24 | 24 |
| BILIRUBINOMETERS | 6630 | 8 | 15109 | 6 | 6 | 1 5 7 | | |
| COUNTERS, CELL | 6640 | 7 | 15112 | 6 | 6 | 1 5 7 | 12 | 12 |
| CELL SEPARATORS | 6640 | 8 | 15113 | 6 | 0 | | | |
| WASHERS, CELL | 6640 | 5 | 15114 | 6 | 6 | 1 | 12 | 12 |
| CENTRIFUGES, REFRIGERATED | 6640 | 8 | 15117 | 6 | 6 | 1 | 12 | 12 |
| CHLORIDIMETERS | 6630 | 8 | 15118 | 6 | 12 | 1 7 | | |
| COUNTERS, COLONY | 6640 | 8 | 15126 | 6 | 6 | 1 5 7 | | |
| CRYOGENIC BLOODBANKING EQUIPMENT | 4110 | 10 | 15127 | 6 | 0 | | | |
| CYSTIC FIBROSIS SCREENING DEVICES | 6515 | 10 | 15128 | 6 | 0 | | | |
| DENSITOMETERS | 6525 | 7 | 15129 | 6 | 6 | 1 | 12 | 12 |
| DILUTERS | 6640 | 10 | 15133 | 6 | 6 | 1 7 | | |
| DISPENSERS, PARAFFIN | 6640 | 10 | 15134 | 12 | 0 | | | |
| DISTILLING UNITS | 6640 | 15 | 15136 | 6 | 0 | | 24 | 0 |
| ELECTROPHORESIS EQUIPMENT | 6630 | 7 | 15138 | 6 | 0 | | | |
| FREEZERS, LABORATORY | 4110 | 10 | 15145 | 6 | 0 | | 12 | 12 |
| HEMOGLOBINOMETERS | 6630 | 8 | 15146 | 6 | 0 | | | |
| INCUBATORS, AEROBIC | 6640 | 10 | 15151 | 6 | 12 | 1 | 24 | 24 |
| INCUBATORS, ANAEROBIC | 6640 | 10 | 15152 | 6 | 12 | 1 | | |
| MICROTOMES, CRYOSTAT | 6640 | 10 | 15157 | 12 | 0 | | 12 | 0 |
| MICROTOMES, ROTARY | 6640 | 10 | 15158 | 12 | 0 | | 24 | 0 |

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| MIXERS, CLINICAL LAB | 6640 | 10 | 15161 | 12 | 0 | | 24 | 0 |
| PH METERS | 6630 | 10 | 15164 | 6 | 6 | 1 7 | 12 | 12 |
| REFRACTOMETERS, LABORATORY | 6650 | 10 | 15169 | 6 | 0 | | | |
| REFRIGERATORS, BIOLOGIC | 4110 | 10 | 15170 | 6 | 0 | | 24 | 0 |
| REFRIGERATORS, BLOODBANK | 4110 | 10 | 15171 | 6 | 6 | 1 | 12 | 12 |
| ROTATORS | 6640 | 10 | 15173 | 12 | 0 | | 24 | 0 |
| SCALES, LABORATORY | 6670 | 10 | 15175 | 12 | 12 | 1 4 | | |
| SHAKERS, LABORATORY | 6640 | 6 | 15178 | 12 | 0 | | 24 | 0 |
| SHARPENERS, MICROTOME KNIFE | 6640 | 10 | 15179 | 12 | 0 | | 24 | 0 |
| COUNTERS, SCINTILLATION | 6525 | 8 | 15184 | 6 | 6 | 1 3 7 | | |
| TISSUE EMBEDDING EQUIPMENT | 6640 | 10 | 15189 | 6 | 0 | | 12 | 0 |
| TISSUE PROCESSORS | 6640 | 10 | 15190 | 6 | 0 | | 12 | 0 |
| TITRATORS | 6630 | 10 | 15191 | 6 | 6 | 1 7 | | |
| VIEW BOXES, RH TYPING | 6640 | 10 | 15195 | 12 | 0 | | | |
| WASHERS, LABWARE | 6640 | 8 | 15196 | 12 | 0 | | | |
| MAGNETS, EYE | 6540 | 10 | 15269 | 12 | 0 | | 12 | 0 |
| INJECTORS, CONTRAST MEDIA, ANGIOGRAPHIC | 6515 | 7 | 15284 | 6 | 6 | 1 | | |
| SCANNERS, LONG-TERMS RECORDING, ECG | 6515 | 7 | 15295 | 12 | 12 | 1 3 5 | | |
| URINARY COLLECTION UNIT, PRECISION MEASURE | 6515 | 8 | 15310 | 12 | 12 | 15 | | |
| INCUBATORS, TEST TUBE | 6640 | 10 | 15327 | 12 | 12 | 1 | 24 | 0 |
| CLINICAL CHEMISTRY ANALYZERS | 6630 | 7 | 15551 | 6 | 6 | 1 5 7 | | |
| COAGULATION ANALYZERS | 6630 | 5 | 15552 | 6 | 6 | 1 5 7 | 12 | 12 |
| CHROMATOGRAPHY EQUIPMENT | 6630 | 10 | 15568 | 6 | 6 | 1 5 7 | | |
| DYNAMOMETERS | 6530 | 15 | 15577 | 12 | 0 | | | |
| MICROSCOPES, LABORATORY | 6650 | 10 | 15588 | 12 | 0 | | | |
| MIXERS | 6640 | 6 | 15590 | 12 | 0 | | 24 | 0 |
| OXYGENATORS | 6515 | 10 | 15592 | 3 | 0 | | | |
| SLIDE STAINERS | 6640 | 10 | 15599 | 12 | 0 | | | |
| SPECTROPHOTOMETERS | 6650 | 8 | 15601 | 6 | 6 | 1 5 7 | 12 | 12 |
| MICROSURGICAL INSTRUMENTS | 6515 | 10 | 15621 | 12 | 0 | | | |
| HEARING AID ANALYZERS | 6515 | 10 | 15633 | 12 | 12 | 5 | | |
| MIDDLE EAR ANALYZER (TYMPANOMETER) | 6515 | 10 | 15634 | 12 | 12 | 1 5 | | |
| STIRRERS | 6640 | 10 | 15651 | 12 | 0 | | 24 | 0 |
| PIPETTERS | 6640 | 5 | 15663 | 6 | 6 | 1 7 | | |

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| BLOOD GAS/PH ANALYZERS | 6630 | 5 | 15709 | 6 | 6 | 1 5 7 | 12 | 12 |
| CAMERAS, ENDOSCOPIC | 6515 | 8 | 15748 | 12 | 0 | | | |
| LASERS, SURGICAL | 6530 | 8 | 15757 | 6 | 12 | 1 3 5 | | |
| SILVER RECOVERY SYSTEMS | 6525 | 5 | 15822 | 12 | 0 | | | |
| CAMERAS, MULTI-IMAGE | 6525 | 10 | 15823 | 6 | 12 | 3 | | |
| ALARMS, CENTRAL GAS SYSTEMS | 6530 | 10 | 15824 | 6 | 0 | | | |
| DISPENSERS, ICE | 4110 | 10 | 15912 | 0 | 0 | | 24 | 0 |
| SINKS, SURGICAL SCRUB | 6530 | 12 | 15936 | 12 | 0 | | | |
| X-RAY FILM PROCESSORS, AUTO-MATIC | 6525 | 8 | 15938 | 6 | 0 | | 12 | 0 |
| X-RAY FILM PROCESSORS, AUTO-MATIC, DENTALS | 6525 | 6 | 15939 | 6 | 0 | | 12 | 0 |
| CAMERAS, GAMMA | 6525 | 8 | 15944 | 6 | 12 | 1 3 5 | | |
| X-RAY FILM MANUAL PROCESSING EQUIPMENT | 6525 | 15 | 15945 | 6 | 0 | | | |
| X-RAY IMAGE INTENSIFIERS | 6525 | 8 | 15963 | 6 | 0 | | | |
| MONITORS, VIDEOS, MEDICAL | 5820 | 7 | 15966 | 12 | 0 | | | |
| BLOOD CULTURE ANALYZER, AUTO-MATIC | 6640 | 8 | 15973 | 6 | 6 | | | |
| X-RAY TUBE ASSYS(STANDS&SUSPENSION) | 6525 | 10 | 15975 | 6 | 0 | | | |
| PACEMAKER PROGRAMMERS | 6515 | 0 | 15993 | 12 | 12 | 5 | | |
| SINKS, PORTABLE | 6545 | 12 | 16023 | 12 | 0 | | 12 | 0 |
| SPHYGMOMANOMETERS, ELECTRONIC | 6515 | 8 | 16157 | 12 | 12 | 1 | | |
| SPHYGMOMANOMETERS, MERCURY | 6515 | 10 | 16158 | 12 | 0 | | | |
| INFUSION PUMPS, SYRINGES, OXYTOCIN | 6515 | 10 | 16167 | 12 | 12 | 1 | | |
| FLUORESCENCE IMMUNOASSAY ANALYSER | 6650 | 8 | 16218 | 6 | 6 | | | |
| TRANSCUTANEOUS MONITORS | 6515 | 7 | 16225 | 12 | 12 | 1 | | |
| LITHOTRIPTERS | 6515 | 8 | 16228 | 6 | 6 | | | |
| ELECTROCARDIOGRAPHS, INTERPRETIVE | 6515 | 8 | 16231 | 12 | 12 | 1 | | |
| MAGNETIC RESONANCE IMAGERS | 6525 | 8 | 16260 | 3 | 0 | | | |
| SMOKE EVACUATION SYSTEMS, LASER | 6530 | 8 | 16262 | 12 | 0 | | | |
| WARMERS, SLIDES, HISTOLOGY | 6640 | 10 | 16292 | 12 | 0 | | | |
| TRAINING AIDS (MANIKINS, ETC.) | 6910 | 10 | 16294 | 0 | 0 | | | |

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|---|------|----|-------|----|----|-------|----|----|
| PILLCOUNTERS, PHARMACEUTICAL | 6530 | 10 | 16326 | 12 | 0 | | | |
| RADIOMETERS, ULTRAVIOLET | 6525 | 8 | 16329 | 12 | 12 | 1 | | |
| DOSIMETERS | 6515 | 10 | 16333 | 12 | 12 | 4 5 | 12 | 12 |
| CURING UNITS, DENTAL | 6520 | 8 | 16353 | 12 | 12 | 1 | | |
| PORCELAIN FURNACES, DENTAL | 6520 | 10 | 16356 | 12 | 12 | 1 | | |
| MERCURY MONITORS/DETECTORS | 6665 | 10 | 16358 | 12 | 0 | | | |
| VACUUM MIXING DEVICES, DENTAL | 6520 | 8 | 16365 | 12 | 0 | | | |
| LIGHTS, DENTALS, ACTIVATOR/CUR- ING | 6520 | 8 | 16386 | 12 | 0 | | | |
| COLLIMATORS, X-RAY | 6525 | 10 | 16389 | 6 | 12 | 1 | | |
| CAMERAS, RADIOGRAPHIC PHOTO- SPOT | 6525 | 8 | 16418 | 6 | 0 | | | |
| CHAIRS, EXAMINATION/TREATMENT | 6530 | 12 | 16437 | 12 | 0 | | 24 | 0 |
| LIGHTSOURCES, MICROSCOPIC | 6650 | 10 | 16438 | 12 | 0 | | | |
| BLOOD GLUCOSE mONITOR, PORTA- BLE | 6630 | 10 | 16488 | 12 | 12 | 1 5 7 | | |
| X-RAY VIEW BOXES, MOTORIZED | 6525 | 10 | 16518 | 12 | 0 | | | |
| ELECTROLYTE ANALYZERS, FLAME PHOTOMETER | 6630 | 7 | 16530 | 6 | 6 | 1 5 7 | 12 | 12 |
| PHOTOMETERS, REFLECTANCE | 6630 | 10 | 16531 | 6 | 0 | | | |
| X-RAY TABLES (RADIOGRAPHIC) | 6525 | 10 | 16544 | 6 | 0 | | | |
| SENSITOMETERS, RADIOGRAPHIC | 6525 | 10 | 16563 | 12 | 0 | | | |
| CELL ANALYZERS | 6630 | 10 | 16582 | 6 | 12 | 1 5 7 | | |
| X-RAY FILM CHANGERS, CASSETTE | 6525 | 10 | 16590 | 6 | 0 | | | |
| TABLES, NUCLEAR MEDICINE (SCAN- NING) | 6525 | 10 | 16599 | 6 | 0 | | | |
| X-RAY GENERATORS | 6525 | 10 | 16602 | 6 | 0 | | | |
| X-RAY TUBES | 6525 | 10 | 16604 | 6 | 0 | | | |
| OXIMETERS, IN VITRO, MULTIWAVE- LENGTH (CO-OX) | 6515 | 7 | 16618 | 12 | 12 | | | |
| PROPHYLAXIS UNITS, DENTALS, UL- TRASONIC | 6520 | 6 | 16693 | 12 | 0 | | | |
| INFUSION PUMP ANALYZERS | 6515 | 5 | 16720 | 12 | 12 | 4 5 | | |
| PRESSURE MONITORS, GENERAL/IN- VASIVES, BLOOD | 6515 | 8 | 16764 | 6 | 12 | 1 | | |
| BLOOD GROUPING SYSTEMS, AUTO- MATED | 6630 | 9 | 16817 | 6 | 6 | 1 5 7 | | |
| STERILIZERS, INOCULATING LOOP | 6640 | 15 | 16828 | 12 | 12 | 1 | 24 | 0 |
| BLOOD CELL PROCESSORS | 6640 | 10 | 16857 | 6 | 6 | 1 | 12 | 12 |

| | | | | | | | | |
|--|------|----|-------|----|----|-------|----|----|
| PROJECTORS, CHARTS, EYE | 6540 | 10 | 16890 | 12 | 0 | | 24 | 0 |
| STERILIZERS, AGAR (DISPENSERS) | 6530 | 10 | 16911 | 6 | 0 | | | |
| CARBON DIOXIDE MONITOR, EX- HALED GAS | 6630 | 10 | 16938 | 6 | 12 | 1 5 7 | | |
| LASERS, OPHTHALMIC | 6540 | 8 | 16944 | 6 | 12 | 1 3 5 | | |
| RECORDERS, VIDEODISK | 5836 | 8 | 16974 | 12 | 0 | | | |
| CAMERAS, VIDEO | 5820 | 8 | 17001 | 12 | 0 | | | |
| PROJECTORS, CINE | 6730 | 10 | 17087 | 12 | 0 | | | |
| BATTERY CHARGERS | 6130 | 10 | 17115 | 12 | 0 | | | |
| PHOROMETERS (PHOROPTERS) | 6540 | 12 | 17119 | 12 | 0 | | 24 | 0 |
| OXIMETERS, PULSE | 6515 | 8 | 17148 | 12 | 12 | | | |
| X-RAY FILM CHEMISTRY, MIXERS | 6525 | 8 | 17235 | 12 | 0 | | | |
| MULTI- GAS MONITORS, RESPIRED/ ANESTHETIC | 6515 | 8 | 17445 | 6 | 6 | 1 5 | 7 | |
| INFORMATION STORAGE UNITS, OPTI- CAL DISK | ---- | 10 | 17513 | 0 | 0 | | | |
| LITHIUM ANALYZER | 6630 | 8 | 17546 | 6 | 12 | 1 5 7 | | |
| NERVE FUNCTION MONITOR | 6515 | 7 | 17582 | 6 | 6 | | | |
| PHOTOTACHOMETERS | 6625 | 5 | 17714 | 12 | 12 | 4 7 | 24 | 24 |
| DATA MANAGEMENT SYSTEMS (LAB- ORATORY) | ---- | 10 | 17762 | 0 | 0 | | | |
| INJECTORS, CONTRAST MEDIA (OTH- ER) | 6515 | 7 | 17968 | 6 | 6 | | | |
| INJECTORS, CONTRAST MEDIA, CT | 6515 | 7 | 17969 | 6 | 6 | | | |
| AUDIOMETER CALIBRATORS | 6625 | 8 | 90000 | 12 | 12 | 5 | | |
| CONDITIONER, HYDROCOLLOID [USE 12565] | 6520 | 10 | 90001 | 12 | 0 | | | |
| GRINDING & POLISHING MACHINES | 6520 | 15 | 90003 | 12 | 0 | | | |
| LATHES, DENTALS, LABORATORY | 6520 | 6 | 90004 | 12 | 0 | | | |
| POLISHERS, LENS | 6540 | 10 | 92038 | 12 | 0 | | | |
| VACUUM FORMERS | 6520 | 10 | 92041 | 12 | 0 | | | |
| MICROSCOPES, CONTACT LENS | 6540 | 8 | 92043 | 12 | 0 | | | |
| MEDICAL DIAGNOSTIC IMAGING SUPT SYSTEMS | ---- | 8 | 93048 | 6 | 6 | | | |
| X-RAY HIGH VOLTAGE DIVIDER SYS- TEMS | 6625 | 10 | 96006 | 12 | 12 | 5 | 12 | 12 |
| POWER SUPPLIES | 6130 | 10 | 96011 | 12 | 12 | 4 | 12 | 12 |
| SHOP MACHINERY, ELECTRIC | 5130 | 8 | 96013 | 12 | 0 | | 24 | 0 |
| ENDOSCOPES | 6515 | 10 | 96024 | 6 | 0 | | | |

| | | | | | | | | |
|---------------------------------------|------|----|-------|----|----|-------|----|----|
| STEAM GENERATORS | 6530 | 15 | 96025 | 6 | 0 | | 12 | 0 |
| CLEANERS, DENTALSTEAM | 6520 | 8 | 96027 | 12 | 0 | | | |
| DUPLICATORS, AUTO,DENTAL | 6520 | 10 | 96028 | 12 | 0 | | | |
| EMULSIFIER-ASPIRATORS | 6515 | 10 | 96029 | 6 | 12 | 1 | | |
| POLYMERIZATOR UNITS | 6520 | 8 | 96031 | 12 | 0 | | | |
| RENAL TRANSPORT UNITS | 6515 | 8 | 96032 | 6 | 0 | | | |
| SCREENERS, VISION | 6540 | 10 | 96033 | 12 | 12 | 1 | | |
| WASHERS, CIDEMATIC | 6640 | 9 | 96035 | 12 | 0 | | | |
| WELDERS, DENTAL | 6520 | 8 | 96036 | 12 | 0 | | | |
| MONITORS, VIDEOS, MEDICAL [USE 15966] | 5820 | 7 | 96043 | 12 | 0 | | | |
| PHOTOTACHOMETERS [USE 17714] | 6625 | 5 | 96045 | 12 | 12 | 4 7 | 24 | 24 |
| OVENS, BURNOUTS, DENTALS, LAB | 6520 | 6 | 96053 | 12 | 12 | 1 7 | | |
| DENTAL LABORATORY EQUIPMENT | 6520 | 10 | 96054 | 12 | 0 | | | |
| COLOR VISION TESTERS | 6540 | 10 | 96055 | 12 | 12 | 5 | | |
| WATER TEST KIT | 6665 | 10 | 96056 | 12 | 0 | | 24 | 0 |
| DOSIMETERS, SOUND [USE 16333] | 6515 | 10 | 96057 | 12 | 12 | 4 5 | 12 | 12 |
| METERS, LIGHT | 6760 | 10 | 96059 | 12 | 12 | 4 5 | 24 | 24 |
| TESTING UNITS, SOUND PERCEPTION | 6515 | 10 | 96060 | 12 | 0 | | | |
| VISION TESTERS, STEREOSCOPE | 6540 | 10 | 96061 | 12 | 0 | | | |
| HEAT TREATING UNITS, OPHTHALMIC | 6540 | 10 | 96062 | 12 | 0 | | | |
| X-RAY CHEMICAL MIXERS [USE 17235] | 6525 | 8 | 96063 | 12 | 0 | | | |
| LIGHTBARS, OCULOMOTOR TESTING | 6540 | 10 | 96064 | 12 | 0 | | | |
| X-RAY CONTROL | 6525 | 10 | 96065 | 6 | 0 | | | |
| X-RAY CEPHALOMETRIC DEVICES | 6525 | 10 | 96066 | 6 | 0 | | | |
| TYMPANOMETERS [USE 15634] | 6515 | 10 | 96070 | 12 | 12 | 1 5 | | |
| OCCUPATIONAL THERAPYEQUIPMENT | 6530 | 10 | 96071 | 12 | 0 | | | |
| LITHIUM ANALYZER [USE 17546] | 6630 | 8 | 96072 | 6 | 12 | 1 5 7 | | |
| LIQUID OXYGEN CONVERTER | 3655 | 10 | 96073 | 12 | 0 | | | |
| SCOTOMETERS | 6540 | 10 | 96074 | 6 | 0 | | | |
| X-RAY BRIGHTNESS CONTROL | 6525 | 10 | 96075 | 6 | 0 | | | |
| ETCHERSYSTEM, DENTAL | 6520 | 5 | 96076 | 12 | 0 | | | |
| X-RAY ROTOR CONTROLLER | 6525 | 10 | 96077 | 6 | 0 | | | |
| X-RAY SPOT FILM DEVICE | 6525 | 10 | 96078 | 6 | 0 | | | |
| DEFIBRILLATOR/MONITOR, AIR EVAC | 6515 | 8 | 96079 | 3 | 6 | 1 | | |

| | | | | | | | | |
|---|------|----|--------|----|----|-------|----|----|
| INCUBATORS, INFANTS, AIR EVAC | 6530 | 10 | 96080 | 3 | 6 | 1 | | |
| VENTILATORS, AIR EVAC | 6515 | 10 | 96081 | 3 | 6 | 1 | | |
| OPTOMETRY EQUIPMENT SETS | 6545 | 10 | 96082 | 12 | 0 | | 24 | 0 |
| X-RAY EQUIPMENT SETS, DENTAL | 6545 | 10 | 96083 | 12 | 12 | 1 | 12 | 12 |
| BLENDERS, ELECTRIC, LAB [USE 15161] | 6640 | 10 | 96084 | 12 | 0 | | 24 | 0 |
| BUFFERS, CORNEAL RUST | 6515 | 10 | 96085 | 12 | 0 | | 24 | 0 |
| HEAT SEALING MACHINES | 3540 | 10 | 96086 | 12 | 0 | | 24 | 0 |
| VACUUM CLEANERS, PLASTER | 6515 | 10 | 96087 | 24 | 0 | | 24 | 0 |
| MEDICAL EQUIP SETS, PHYSEXAM, FLIGHTSURGEON | 6545 | 10 | 96088 | 12 | 0 | | 24 | 0 |
| INFUSION PUMPS, AIR EVAC | 6515 | 10 | 96089 | 12 | 12 | 1 | 12 | 12 |
| DENTAL TRIMMER | 6520 | 10 | 96090 | 12 | 12 | | | |
| TABLES, OPERATING, ANIMAL | 6530 | 15 | 96091 | 12 | 0 | | | |
| MEDICALS, NOSCHEDULED WORK ORDERS | | 10 | M0001 | 0 | 0 | | | |
| MEDICALS, PM ANNUALLY | | 10 | MMM PA | 12 | 0 | | 24 | 0 |
| MEDICALS, PM MONTHLY | | 10 | MMM PM | 1 | 0 | | 12 | 0 |
| MEDICALS, PM QUARTERLY | | 10 | MMM PQ | 3 | 0 | | 12 | 0 |
| MEDICALS, PM SEMIANNUALLY | | 10 | MMM PS | 6 | 0 | | 12 | 0 |
| NONMEDICALS, NOSCHEDULED WORKORDERS | | 10 | n0001 | 0 | 0 | | | |
| NONMEDICALS, CALIBRATE ANNUALLY | | 10 | nnnca | 12 | 12 | 3 | 24 | 24 |
| NONMEDICALS, CALIBRATE SEMIANNUALLY | | 10 | nnncs | 6 | 6 | 3 | 24 | 12 |
| NONMEDICALS, PM ANNUALLY | | 10 | nnnpa | 12 | 0 | | 24 | 0 |
| NONMEDICALS, PM MONTHLY | | 10 | nnnpm | 1 | 0 | | 12 | 0 |
| NONMEDICALS, PM QUARTERLY | | 10 | nnnpq | 3 | 0 | | 12 | 0 |
| NONMEDICALS, PM SEMIANNUALLY | | 10 | nnnps | 6 | 0 | | 12 | 0 |
| NONMEDICAL SAFETY, ANNUALLY | | 10 | nnnsa | 12 | 0 | | 24 | 0 |
| NONMEDICAL SAFETY, SEMIANNUALLY | | 10 | nnnss | 6 | 0 | | 24 | 0 |
| TEST EQUIPMENTS, CALIBRATE ANNUALLY | ---- | 5 | tttca | 12 | 12 | 4 5 6 | 12 | 12 |

Attachment 4

MEDICAL EQUIPMENT REPAIR CENTERS, BASES, AND ACTIVITIES**A4.1. Malcolm Grow Air Force Medical Center, Andrews AFB MD 20331-5184.****A4.1.1. Active Air Force Fixed Medical Treatment Facilities (7).**

| Base and Zip Code | Unit | Major Command |
|--------------------------------------|-------------------------|---------------|
| Bolling AFB DC 20332-5300 | 1100th Medical Squadron | AMC |
| Dover AFB DE 19902-5300 | 436th Medical Group | AMC |
| Griffis AFB NY 13441-4301 | 16th Medical Group | ACC |
| Hanscom AFB MA 01731-5300 | 647th Medical Squadron | AFMC |
| Lajes Field (Azores) AEPO 09720-5260 | 65th Medical Group | ACC |
| Langley AFB VA 23665-5300 | 1st Medical Group | ACC |
| McGuire AFB NJ 08641-5300 | 438th Medical Group | AMC |
| Plattsburgh AFB NY 12903-5300 | 380th Medical Group | AMC |

A4.1.2. Geographically Separated Units (38).

| | | |
|-----------------------------|----------------------------|-------|
| Atlantic City NJ 08405-5199 | 177th Air Force Clinic | ANG |
| Baltimore MD 21220-2899 | 135th ACC Clinic | ANG |
| Baltimore MD 21220-2899 | 175th ACC Clinic | ANG |
| Bangor ME 04401-3099 | 101st Air Force ACC Clinic | ANG |
| Burlington VT 05401-5895 | 158th ACC Clinic | ANG |
| Dover AFB DE 19902-5300 | 512th Air Force Clinic | AFRES |
| East Granby CT 06026-5000 | 103rd ACC Clinic | ANG |
| Hancock AFB NY 13211-7099 | 174th ACC Clinic | ANG |
| McGuire AFB NJ 08641-7004 | 69th Aeromed Evac Sq | AFRES |
| McGuire AFB NJ 08641-5300 | 514th Air Force Clinic | AFRES |
| McGuire AFB NJ 08641-7004 | 72nd Aeromed Evac Sq | AFRES |
| McGuire AFB NJ 08641-6004 | 108th ACC Clinic | ANG |
| McGuire AFB NJ 08641-6004 | 170th Air Force Clinic | ANG |
| Martinsburg WV 25401-0204 | 167th Aeromed Evac Flt | ANG |
| Martinsburg WV 25401-0204 | 167th ACC Clinic | ANG |
| Middletown PA 17057-5086 | 193rd ACC Hospital | ANG |
| New Castle DE 19720-2495 | 142nd Aeromed Evac Flt | ANG |

| | | |
|----------------------------------|-------------------------|-------|
| New Castle DE 19720-2495 | 166th ACC Clinic | ANG |
| Newburgh NY 12550-5043 | 105 Air Force Clinic | ANG |
| Niagara Falls NY 14304-6000 | 107th Air Force Clinic | ANG |
| Niagara Falls NY 14304-5300 | 70th Aeromed Evac Flt | AFRES |
| Niagara Falls NY 14304-5000 | 914th Medical Squadron | AFRES |
| North Kingston RI 02852-0794 | 143rd ACC Hospital | ANG |
| Otis AFB MA 02542-5001 | 102nd Air Force Clinic | ANG |
| Pease AFB NH 03803-6547 | 157th Air Force Clinic | ANG |
| San Juan PR 00914-53001 | 56th ACC Clinic | ANG |
| Sandston VA 23150-6109 | 192nd ACC Clinic | ANG |
| Schenectady NY 12301 | 109th ACC Clinic | ANG |
| Schenectady NY 12301 | Schenectady NY 12301 | ANG |
| Sondrestrom AB GL APO AE 09121 | USAF Clinic Sondrestrom | SPACE |
| Thule AB GL APO AE 09704-5000 | 1012th ABG | SPACE |
| Washington DC 20330-5000 | Pentagon Clinic | AMC |
| Westfield MA 01085-1385 | 104th ACC Clinic | ANG |
| West Hampton Beach NY 11978-1294 | 106th ACC Clinic | ANG |
| Westover AFB MA 01022-5000 | 74th Aeromed Evac Sq | AFRES |
| Westover AFB MA 01022-5300 | 439th Air Force Clinic | AFRES |
| Willow Grove PA 19090-5101 | 111th ACC Clinic | ANG |
| Willow Grove PA 19090-5300 | 913th Medical Squadron | AFRES |

A4.2. 3rd Medical Center, Elmendorf AFB AK 99506-3700.

A4.2.1. Active Air Force Fixed Medical Treatment Facilities (1).

| | | |
|---------------------------|------------------------|-------|
| Eielson AFB AK 97022-3250 | 343rd Medical Squadron | PACAF |
|---------------------------|------------------------|-------|

A4.2.2. Geographically Separated Units (7).

| | | |
|--------------------------------|-----------------------------------|-------|
| Anchorage AK 99502-1998 | 176th ACC Clinic | ANG |
| Clear MEWS AK 99506 | Medical Aid Station | PACAF |
| Galena Health Clinic, AK 98723 | Civilian Clinic | PHS |
| Galena Aprt AK 99506 | 5072 ABS Medical Aid Sta- tion | PACAF |
| King Salmon AFS AK 99506 | 5071 ABS Medical Aid Sta- tion | PACAF |
| Kodiak AK 99619 | Coast Guard Clinic | USCG |

| | | |
|---------------------|---------------------|-------|
| Shemya AFB AK 99506 | Medical Aid Station | PACAF |
|---------------------|---------------------|-------|

A4.3. 15Th Medical Group, Hickam AFB HI 96853-5300.

A4.3.1. Active Air Force Fixed Medical Treatment Facilities (1).

| | | |
|----------------------------------|--------------------|-------|
| Andersen AFB Guam APO AP 96542 6 | 33rd Medical Group | PACAF |
|----------------------------------|--------------------|-------|

A4.3.2. Geographically Separated Units (3).

| | | |
|----------------------------|----------------------------|-------|
| Kokee AFS, Kauai HI 968531 | 54 OLMC | ANG |
| Wake Island AFB HI 92501 | Air Force Medical Facility | PACAF |
| Wheeler AFB HI 96854-5000 | Medical Treatment Facility | PACAF |

A4.4. Keesler Medical Center, Keesler AFB MS 39534-5300.

A4.4.1. Active Air Force Fixed Medical Treatment Facilities (14).

| | | |
|-----------------------------------|------------------------|-------|
| Barksdale AFB LA 71110-5300 | 2nd Medical Group | ACC |
| Charleston AFB SC 29404-5350 | 437th Medical Squadron | AMC |
| Columbus AFB MS 39710-5300 | 14th Medical Group | AETC |
| Eglin AFB FL 32542-1283 | 646th Medical Group | AFMC |
| Howard AFB APN 34001-5300 | 24th Medical Squadron | ACC |
| MacDill AFB FL 33608-5300 | 56th Medical Group | ACC |
| Maxwell AFB AL 36112-5304 | 502nd Medical Group | AU |
| Moody AFB GA 31699-5300 | 347th Medical Group | ACC |
| Patrick AFB FL 32925-5300 | 45th Medical Group | SPACE |
| Pope AFB NC 28308-2320 | 23rd Medical Group | ACC |
| Robins AFB GA 31098-5300 | 653rd Medical Group | AFMC |
| Seymour Johnson AFB NC 27531-5300 | 4th Medical Group | ACC |
| Shaw AFB SC 29152-5019 | 20th Medical Group | ACC |
| Tyndall AFB FL 32403-5300 | 325th Medical Group | ACC |

A4.4.2. Geographically Separated Units (26).

| | | |
|----------------------------|---------------------|--------|
| ANG Gulfport MS 39502-1300 | Field Training Site | MS ANG |
| Ascension Island, Atlantic | 24th Medical Group | NASA |
| Badin ANGB NC 28009 | 263rd Mob Comm Gp | NC ANG |
| Birmingham AL 35217-3595 | 117th ACC Hospital | AL ANG |

| | | |
|--------------------------------------|-------------------------|--------|
| Charleston AFB SC 29404-5000 | 31st Aeromed Evac Sq | AFRES |
| Charlotte NC 28208-5797 | 145th ACC Control Sq | NC ANG |
| Dobbins AFB GA 30069-5000 | 64th Aeromed Evac Flt | AFRES |
| Dobbins AFB GA 30069-5000 | 94th Medical Squadron | AFRES |
| Dobbins AFB GA 30069-6004 | 116th ACC Hospital | GA ANG |
| Dothan AL 36303 | 115 Tac Control Sq | AL ANG |
| Eglin AFB, Aux Fld 3, FL 32542-5000 | 919th Medical Squadron | AFRES |
| Eglin AFB, Aux Fld 9, FL 32542-5000 | Hurlburt Clinic | AFSC |
| Maxwell AFB AL 36112-5000 | Federal Prison Clinic | |
| Garden City GA 31498-7568 | 165th ACC Hospital | GA ANG |
| Glynco Jetport Brunswick GA 31522 | 224th Combat Comm Sq | GA ANG |
| Gunter AFS AL 36112-5000 | Air Force Clinic Gunter | AU |
| Jackson ANGB MS 39208-0810 | 172nd ACC Clinic | MS ANG |
| Jackson ANGB MS 39208-0810 | 183rd Aeromed Evac Flt | MS ANG |
| Jacksonville ANG Trng Site FL 322291 | 25th Air Force Clinic | FL ANG |
| Martin ANGB Gadsden AL 35902 | 226th Mob Comm Gp | AL ANG |
| McCollum ANGB Kenneshaw GA 30144 | 129th ACC Control Sq | GA ANG |
| McEntire ANGB SC 29044-9690 | 169th ACC Clinic | SC ANG |
| Meridian MS 39302-1825 | 186th ACC Clinic | MS ANG |
| Montgomery AL 36196-0001 | 187th ACC Clinic | AL ANG |
| NAS New Orleans LA 70143-0400 | 926th Medical Squadron | AFRES |
| NAS New Orleans LA 70143-5000 | 159th ACC Clinic | LA ANG |

A4.5. Wilford Hall Medical Center, Lackland AFB TX 78236-5000.

A4.5.1. Active Air Force Fixed Medical Treatment Facilities (4).

| | | |
|----------------------------|------------------------|------|
| Brooks AFB TX 78235-5000 | 648th Medical Squadron | AFMC |
| Kelly AFB TX 78241-5300 | 651st Medical Squadron | AFMC |
| Laughlin AFB TX 78840 | 47th Medical Group | AETC |
| Randolph AFB TX 78150-4801 | 12th Medical Group | AETC |

A4.5.2. Geographically Separated Units (7).

| | | |
|------------------------------|-----------------|-------|
| Bergstrom AFB TX 78743-50009 | 24th ACC Clinic | AFRES |
|------------------------------|-----------------|-------|

| | | |
|------------------------------------|-------------------------|-------|
| Ellington Field ANGB TX 77034-5586 | 147th Air Force Clinic | ANG |
| Kelly AFB TX 78241-7001 | 149th ACC Clinic | ANG |
| Kelly AFB TX 78241-5000 | 32nd Aeromed Evac Gp | AFRES |
| Kelly AFB TX 78241-5000 | 34th Aeromed Evac Flt | AFRES |
| Kelly AFB TX 78241-7001 | 307th Civil Engineer Sq | ANG |
| Kelly AFB TX 78241-5300 | 433rd Air Force Clinic | AFRES |

A4.6. Wright-Patterson Medical Center, Wright-Patterson AFB OH 45433-5229.

A4.6.1. Active Air Force Fixed Medical Treatment Facilities (1).

| | | |
|-------------------------------|---------------------|-----|
| K.I. Sawyer AFB MI 49843-5300 | 410th Medical Group | ACC |
|-------------------------------|---------------------|-----|

A4.6.2. Geographically Separated Units (44).

| | | |
|----------------------------|---------------------------|-------|
| Alpena MI 49707-8125 | Field Training Site | ANG |
| Arnold AFB TN 37389-5000 | Air Force Aid Station | AFSC |
| Battle Creek MI 49015-1291 | 110th ACC Clinic | ANG |
| Charleston WV 25311-5000 | 130th ACC Clinic | ANG |
| Chicago IL 60666-5000 | 63d Aeromed Evac Sq | AFRES |
| Chicago IL 60666-0486 | 126th Air Force Clinic | ANG |
| Chicago IL 60666-50009 | 28th Medical Squadron | AFRES |
| Columbus OH 43215 | Defense Constr Supply Ctr | DCSC |
| Dayton OH 45410 | Air Force Clinic | DESC |
| Ft Wayne IN 46809-5000 | 122nd ACC Hospital | ANG |
| Grissom AFB IN 46971-5000 | 434th Air Force Clinic | AFRES |
| Kincheloe MI 49788- | Indian Health Service | PHS |
| Knoxville TN 37950-5000 | 134th Air Force Clinic | ANG |
| Louisville KY 40213-2678 | 123d ACC Hospital | ANG |
| Madison WI 53704-2591 | 115th ACC Hospital | ANG |
| Mansfield OH 44901-5000 | 179th ACC Clinic | ANG |
| Milwaukee WI | USCG Group Office | USCG |
| Milwaukee WI 53207-5300 | 440th Medical Squadron | AFRES |
| Milwaukee WI 53207-6199 | 128th ACC Clinic | ANG |
| Muskegon MI 49441 | USCG Group Office | USCG |
| Nashville TN 37217-0267 | 118th Aeromed Evac Sq | ANG |
| Nashville TN 37217-0267 | 118th ACC Hospital | ANG |

| | | |
|----------------------------------|-------------------------|-------|
| Newark AFS OH 43055 | Air Force Clinic | AFMC |
| Peoria IL 61607-1498 | 182nd ACC Clinic | ANG |
| Pittsburgh PA 15231-5000 | 33d Aeromed Evac Sq | AFRES |
| Pittsburgh PA 15231-0459 | 171st Air Force Clinic | ANG |
| Pittsburgh PA 15231-5000 | 911th Medical Squadron | AFRES |
| Rickenbacker ANGB OH 43217-5006 | 160th Air Force Clinic | ANG |
| Rickenbacker ANGB OH 43217-5000 | 67th Aeromed Evac Flt | AFRES |
| Rickenbacker ANGB OH 43217-50071 | 21st ACC Hospital | ANG |
| Rickenbacker ANGB OH 43217-5000 | 911th USAF Clinic | AFRES |
| Sault St. Marie MI 49783 | USCG Group Office | USCG |
| Selfridge ANGB MI 48045-5036 | 127th ACC Clinic | ANG |
| Selfridge ANGB MI 48045-5036 | 191st Air Force Clinic | ANG |
| Selfridge ANGB MI 48045-5000 | 45th Aeromed Evac Flt | AFRES |
| Selfridge ANGB MI 48045-5000 | 27th Medical Squadron | AFRES |
| Springfield IL 62707-5000 | 183d ACC Clinic | ANG |
| Springfield OH 45501-1780 | 178th ACC Hospital | ANG |
| Swanton OH 43558-5300 | 180th ACC Clinic | ANG |
| Terre Haute IN 47803-5000 | 181st ACC Clinic | ANG |
| Traverse City MI 49634 | Coast Guard Air Station | USCG |
| Volk Field WI 54618-5001 | Field Training Site | ANG |
| Youngstown OH 44473-5000 | 910th Medical Squadron | AFRES |

A4.7. Scott Medical Center, Scott AFB IL 62225-5300.

A4.7.1. Active Air Force Fixed Medical Treatment Facilities (7).

| | | |
|-------------------------------|---------------------|-----|
| Ellsworth AFB SD 57706-5300 | 28th Medical Group | ACC |
| Grand Forks AFB ND 58205-6332 | 319th Medical Group | ACC |
| Little Rock AFB AR 72099-5300 | 314th Medical Group | AMC |
| McConnell AFB KS 67221-5300 | 22th Medical Group | ACC |
| Minot AFB ND 58705-5024 | 5th Medical Group | ACC |
| Offutt AFB NE 68113-2160 | 55th Medical Group | ACC |
| Whiteman AFB MO 65305-5300 | 509th Medical Group | ACC |

A4.7.2. Geographically Separated Units (22).

| | | |
|--|------------------------|-------|
| Bridgeton MO 63044-2371 | 131st ACC Hospital | ANG |
| Des Moines IA 50321-2799 | 132nd ACC Hospital | ANG |
| Duluth IAP MN 55811-5000 | 148th Air Force Clinic | ANG |
| Fargo ND 58105-5536 | 119th Air Force Clinic | ANG |
| Ft.Smith Municipal Arpt AR 72903-6096 | 188th ACC Clinic | ANG |
| Forbes Field KS 66620 | 190th ACC Control Gp | ANG |
| Forbes Field KS 66619-5300 | 190th Air Force Clinic | ANG |
| Jefferson Barracks MO 63125 | 157th ACC Control Gp | ANG |
| Lincoln Municipal Airport NE 685241 | 55th ACC Clinic | ANG |
| Little Rock AFB AR 72099-5000 | 189th Air Force Clinic | ANG |
| McConnell AFB KS 67221-6225 | 184th ACC Clinic | ANG |
| Memphis TN 38181-0026 | 164th ACC Clinic | ANG |
| Minneapolis-St. Paul IAP MN 55111-4098 | 133rd ACC Hospital | ANG |
| Minneapolis-St. Paul IAP MN 55450-5000 | 47th Aeromed Evac Flt | AFRES |
| Minneapolis-St. Paul IAP MN 55450-5000 | 934th Medical Squadron | AFRES |
| Minneapolis-St. Paul IAP MN 55111-4098 | 109th Aeromed Evac Flt | ANG |
| Whiteman AFB MO 64030-5000 | 442nd Medical Squadron | AFRES |
| Whiteman AFB MO 64030-5000 | 36th Aeromed Evac Flt | ANG |
| St Joseph MO 64503-3247 | 139th ACC Clinic | ANG |
| Sioux City IA 51054-1054 | 185th ACC Clinic | ANG |
| Sioux Falls SD 57117-5044 | 114th ACC Clinic | ANG |
| Tulsa ANGB OK 74115-1699 | 138th ACC Clinic | ANG |

A4.8. 396th Medical Group, Sheppard AFB TX 76311-3484.**A4.8.1. Active Air Force Fixed Medical Treatment Facilities (12).**

| | | |
|-------------------------------|-----------------------|------|
| Altus AFB OK 73523-5005 | 97th Medical Group | AMC |
| Cannon AFB NM 88103-5300 | 27th Medical Group | ACC |
| Dyess AFB TX 79607-5300 | 7th Medical Group | ACC |
| F.E. Warren AFB WY 82005-5300 | 90th Medical Group | ACC |
| Goodfellow AFB TX 76908-5000 | 17th Medical Squadron | AETC |

| | | |
|----------------------------|-----------------------|-------|
| Holloman AFB NM 88330-5300 | 49th Medical Group | ACC |
| Kirtland AFB NM 87117-5300 | 377th Medical Group | AFMC |
| Peterson AFB CO 80914-1540 | 21st Medical Group | SPACE |
| Reese AFB TX 79489-5008 | 64th Medical Squadron | AETC |
| Tinker AFB OK 73145-8102 | 654th Medical Group | AFMC |
| USAF Academy CO 80840-5300 | 54th Medical Group | USAFA |
| Vance AFB OK 73705-5105 | 71st Medical Squadron | AETC |

A4.8.2. Geographically Separated Units (7).

| | | |
|------------------------------------|------------------------|-------|
| Buckley ANGB CO 80011-9599 | 140th ACC Hospital | ANG |
| Cheyenne Muni Arpt WY 82003-2268 | 153rd ACC Clinic | ANG |
| Hensley Field Dallas TX 75211-9503 | 136th ACC Hospital | ANG |
| Kirtland AFB NM 87195-5510 | 150th ACC Clinic | ANG |
| Oklahoma City OK 73169-5000 | 137th ACC Hospital | ANG |
| Peterson AFB CO 80914-5300 | 302nd Medical Squadron | AFRES |
| Tinker AFB OK 73145-5000 | 507th Medical Squadron | AFRES |

A4.9. David Grant Medical Center, Travis AFB CA 94535-1800.

A4.9.1. Active Air Force Fixed Medical Treatment Facilities (16).

| | | |
|---------------------------------|------------------------|------|
| Beale AFB CA 95903-1908 | 9th Medical Group | ACC |
| Castle AFB CA 95342-5300 | 93rd Medical Group | ACC |
| Davis-Monthan AFB AZ 85707-5300 | 355th Medical Group | ACC |
| Edwards AFB CA 93523-5300 | 650th Medical Group | AFMC |
| Fairchild AFB WA 99011-5300 | 92nd Medical Group | ACC |
| Hill AFB UT 84056-5012 | 649th Medical Group | AFMC |
| Los Angeles AFB CA 90009-2960 | 655th Medical Squadron | AFMC |
| Luke AFB AZ 85309-5300 | 58th Medical Group | ACC |
| Malmstrom AFB MT 59402-5300 | 43rd Medical Group | AMC |
| March AFB CA 92518-5300 | 722nd Medical Group | AMC |
| McChord AFB WA 98438-1312 | 62nd Medical Group | AMC |
| McClellan AFB CA 95652-1074 | 652nd Medical Group | AFMC |
| Mountain Home AFB ID 83648-5300 | 366th Medical Group | ACC |
| Nellis AFB NV 89191-7007 | 554th Medical Group | ACC |
| Tonapah TR NV 89191-5000 | 37th Medical Squadron | ACC |

Vandenberg AFB CA 93437-5300 30th Medical Group SPACE

A4.9.2. Geographically Separated Units (34).

| | | |
|------------------------------|-------------------------|-------|
| Bellingham WA | 252nd Combat Comm Sq | ANG |
| Boise ID 83707-0045 | 124th ACC Clinic | ANG |
| Channel Island CA 93041-4001 | 146th Aeromed Evac Sq | ANG |
| Everette WA | 215th EIS | ANG |
| Fairchild AFB WA 99011-6434 | 141st Air Force Clinic | ANG |
| Fresno CA 93727-2199 | 144th Air Force Clinic | ANG |
| Gila Bend Air Force | Auxiliary Field AZ | ACC |
| Great Falls MT 59401-5000 | 120th Air Force Clinic | ANG |
| Hill AFB UT 84056-53004 | 19th Medical Squadron | AFRES |
| Tonopah Air Station | Auxiliary AFS NV 89110 | ACC |
| Klamath Falls OR 97603 | 114 TF/TS Kingsley Fld | ANG |
| Luke AFB AZ 85309-500 | 0944th Medical Squadron | AFRES |
| McChord AFB WA 98438-5000 | 40th Aeromed Evac Sq | AFRES |
| McChord AFB WA 98438-5000 | 446th Air Force Clinic | AFRES |
| McClellan AFB CA 95652-5000 | AFLC Clinic (civ) | AFMC |
| Makah AFS WA 98357 | 758 Radar Squadron | ACC |
| March AFB CA 92518-5000 | 163rd ACC Clinic | ANG |
| March AFB CA 92518-5000 | 943rd Air Force Clinic | AFRES |
| March AFB CA 92518-5000 | 452nd Air Force Clinic | AFRES |
| Mather AFB CA 95655-5000 | 940th Air Force Clinic | AFRES |
| McChord AFB WA | 39th Medical Svs Sq | AFRES |
| Moffett Field CA 940351 | 29th ACC Clinic | ANG |
| Norton AFB CA 92409-5000 | 68th Aeromed Evac Sq | AFRES |
| Norton AFB CA 92409-5000 | 445th Air Force Clinic | AFRES |
| Phoenix AZ 85034-6098 | 161st Air Force Clinic | ANG |
| Portland OR 97218-2797 | 142nd Air Force Clinic | ANG |
| Portland OR 97218-50009 | 39th ACC Clinic | AFRES |
| Portland OR | 304th Pararescue | ARRS |
| Reno NV 89502-4494 | 152nd ACC Clinic | ANG |
| Salt Lake City UT 84116-2999 | 151st Air Force Clinic | ANG |
| Seattle WA 98108 | 143 Mobile Comm Sq | ANG |
| Tacoma WA 98430 | 252nd Combat Comm Sq | ANG |

| | | |
|------------------------|------------------------|-----|
| Tucson AZ 85734-1037 | 162th Air Force Clinic | ANG |
| Van Nuys CA 91406-4001 | 146th ACC Hospital | ANG |

A4.10. 39Th Tactical Group Hospital, Incirlik AB, Turkey, APO AE 09824-5300.**A4.10.1. Active Air Force Fixed Medical Treatment Facilities (2).**

| | | |
|------------------|------------------------|-------|
| Aviano AB, Italy | 401st Medical Squadron | USAFE |
| Izmir AB, Turkey | 7241st Medical Flight | USAFE |

A4.10.2. Geographically Separated Units (2).

| | | |
|--------------------|----------------|-------|
| Diyarbakir, Turkey | USAF MAS | USAFE |
| Sinop, Turkey | Army MAS Sinop | Army |

A4.11. 48th Medical Group, RAF Lakenheath, United Kingdom, APO AE 09464-5300.**A4.11.1. Active Air Force Fixed Medical Treatment Facilities (7).**

| | | |
|-----------------------------------|------------------------|-------|
| Bitburg AB, Germany | 36th Medical Group | USAFE |
| Geilenkirchen AB, Germany | 36th Medical Squadron | USAFE |
| RAF Chicksands, United Kingdom | 7274th ABG Clinic | USAFE |
| RAF Upper Heyford, United Kingdom | 20th Medical Group | USAFE |
| Ramstein AB, Germany | 86th Medical Group | USAFE |
| Rhein-Main AB, Germany | 435th Medical Squadron | USAFE |
| Sembach AB, Germany | 601st Medical Squadron | USAFE |

A4.11.2. Geographically Separated Units (16).

| | | |
|----------------------------------|-------------------------------------|-------|
| Moscow, Russia | Embassy Moscow | State |
| Oslo, Norway | USAF MAS Oslo | USAFE |
| RAF Brawdy, United Kingdom | Navy Dispensary Wales | Navy |
| RAF Croughton, United Kingdom | Air Force Clinic Croughton | USAFE |
| RAF Edzell, United Kingdom | Navy Dispensary Scotland | Navy |
| RAF High Wycombe, United Kingdom | Air Force Clinic Wycombe | USAFE |
| RAF Macrihanish, Scotland | Navy Aid Station | Navy |
| RAF Mildenhall, United Kingdom | USAF Clinic Mildenhall Sta- tion | USAFE |
| RAF Molesworth, United Kingdom | Air Force Medical Aid | USAFE |

| | | |
|--------------------------------|-----------------------------|-------|
| RAF Sculthorpe | Air Force Clinic Sculthorpe | USAFE |
| RAF St. Mawgan, United Kingdom | Navy Aid Station | Navy |
| RAF Thurso | Navy Dispensary Scotland | Navy |
| RAF Weathersfield | USAF Clinic Weathersfield | USAFE |
| Naval Activities | USN Dispensary London | Navy |
| | UK | |
| Navy Sandbank | Navy Dispensary Scotland | Navy |
| USS Simon Lake | Navy Subtender Scotland | Navy |

A4.12. RAF Little Rissington Contingency Hospital, United Kingdom, APO AE 09467-5300.

A4.12.1. Active Air Force Fixed Medical Treatment Facilities (2).

| | | |
|---------------------------------|--------------------------|-------|
| Holstebro, Denmark | 610th USAF Cont Hospital | USAFE |
| RAF Nocton Hall, United Kingdom | 310th USAF Cont Hospital | USAFE |

A4.12.2. Geographically Separated Units (17).

| | | |
|-------------------------------|-------------------------|-------|
| Ahlhorn, Germany | Det 3/81 TFW | USAFE |
| Bad Kreuzhach, Germany | 622 TCF/SG | USAFE |
| Bad Munder, Germany | 609 TCS/SG | USAFE |
| Basdahl, Germany | Radar Station 606th TCS | USAFE |
| Buechel, Germany | 7501st MUNNS Buechel | USAFE |
| Decimomannu, Italy | 7555th TTS Aid Station | USAFE |
| Hessich Oldendorf, Germany | USAF MAS Hessich Olden- | USAFE |
| | dorf | |
| Kleine Brogel, Belgium | 7361st MUNNS Klein Bro- | USAFE |
| | gel | |
| Memmingen, Germany | 7261st MUNNS Memmin- | USAFE |
| | gen | |
| Moscow, Russia | Embassy Moscow | State |
| Norvenich, Germany | 7502nd MUNNS Norvenich | USAFE |
| Oslo, Norway | Air Force MAS Oslo | USAFE |
| Rhein-Main AB AEGE 09097-5300 | 435th Medical Squadron | USAFE |
| Schwelenturp, Germany | 629 TCF/SG | USAFE |
| Vokel, Netherlands | 7362nd Vokel | USAFE |
| Wanna, Germany | 626 TCF/SG | USAFE |

A4.13. 374th Medical Group, Yokota AB Japan, APO AP 96328-5300.**A4.13.1. Active Air Force Fixed Medical Treatment Facilities (5).**

| | | |
|------------------------------------|--------------------------|-------|
| Kadena AB Japan, APO AP 96368-5142 | 18th Medical Group | PACAF |
| Kimhae AB Korea, APO AP 96214-5300 | 658th USAF Cont Hospital | PACAF |
| Kunsan AB Korea, APO AP 96264-5300 | 8th Medical Group | PACAF |
| Misawa AB Japan, APO AP 96319-5300 | 432nd Medical Group | PACAF |
| Osan AB Korea, APO AP 96278-5300 | 51st Medical Group | PACAF |

A4.13.1.1. Geographically Separated Units (4).

| | | |
|-------------------------|-------------------|-------|
| Camp Zama, Japan | Camp Zama Clinic | |
| Kadena AB, JapanOkinawa | OLAD OEHL | AFSC |
| Kadena AB, Japan | DODD Schools | DODDS |
| Tokyo, Japan | US Embassy Clinic | State |

A4.13.2. Geographically Separated Units (4).

| | | |
|------------------|-------------------|-------|
| Camp Zama, Japan | Camp Zama Clinic | |
| Kadena AB, Japan | Okinawa OLAD OEHL | AFSC |
| Kadena AB, Japan | DODD Schools | DODDS |
| Tokyo, Japan | US Embassy Clinic | State |

Attachment 5

FACILITY MANAGEMENT PROGRAM GUIDANCE PUBLICATIONS

A5.1. Essential Publications. This paragraph lists the publications considered essential to the operation of an effective facility management program. The facility manager maintains a current file of these publications or ensures immediate access to them nearby. Managers ensure that facility management personnel are familiar with each publication. See paragraph **A5.3.** for sources.

AFJI 23-207, *Storage and Handling of Compressed Gases and Liquids in Cylinders, and of Cylinders* (formerly AFR 67-12)

AFI 31-209, *The Installation and Resources Protection Program* (formerly AFR 125-37)

AFI 32-1021, *Programming Civil Engineer Resources - Appropriated Fund Resources* (formerly AFR 86-1)

AFI 32-1031, *Operations Management* (formerly AFR 85-2)

AFI 32-1063, *Operation and Maintenance of Electric Power Systems* (formerly AFR 91-4)

AFI 32-2001, *Fire Protection Program* (formerly AFR 92-1)

AFI 32-9005, *Establishing, Accounting, and Reporting Real Property* (formerly AFR 87-5)

AFI 33-106, *Land Mobile Radio Management* (formerly AFR 700-18)

AFI 41-203, *Electrical Safety in Medical Treatment Facilities* (formerly AFR 160-3)

AFI 44-108, *Infection Control Program* (formerly AFR 160-41)

AFI 44-119, *Quality Assurance and Risk Management in the Air Force Medical Service* (formerly AFR 168-13)

AFI 64-108, *Base Level Service Contract Administration* (formerly AFR 70-9)

AFI 64-108, *Base Level Service Contracts* (formerly AFR 400-28)

AFI 91-202, *The US Air Force Mishap Prevention Program* (formerly AFR 127-2)

AFI 91-204, *Investigating and Reporting US Air Force Mishaps* (formerly AFR 127-4)

AFI 91-301, *Air Force Occupational Safety, Fire Prevention and Health Program* (formerly AFR 127-12)

AFOSH 127-8, *Medical Facilities*

NFPA 70, National Electric Code

NFPA 99, Standard for Health Care Facilities

NFPA 101, Life Safety Code

Accreditation Manual for Hospitals (Joint Commission on Accreditation of Healthcare Organizations) (hospitals only)

Ambulatory Care Standards Manual (JCAHO) (Ambulatory Care Clinics and Clinics)

Joint Commission Plant Technology and Safety Management Series: Key Items, Probes, and Scoring Survey Guide: Hospital Accreditation Program (hospitals only)

A5.2. Useful Publications. Facility management personnel may maintain these publications:

AFI 38-301, *Productivity Enhancing Capital Investment (PECI) Program* (formerly AFR 25-3)

AFI 32-1023, *Design and Construction Management* (formerly AFR 89-1)

AFI 44-118, *Administration of Medical Activities* (formerly AFR 168-4)

AFM 85-59, *Preventive/Recurring Maintenance Handbook*

AFM 171-200, volume 2, *The Base Engineer Automated Management System (BEAMS)*

NFPA 50, Standard for Bulk Oxygen Systems at Consumer Sites

CGA Pamphlet G-4, Oxygen

CGA Pamphlet P-1, Safe Handling of Compressed Gases in Containers

CGA Pamphlet P-2, Characteristics and Safe Handling of Medical Gases

CGA Pamphlet P-2.1, Recommendations for Medical - Surgical Vacuum Systems in Health Care Facilities

A5.3. Where to Obtain Commercial Publications. Sources for the commercial publications listed in paragraphs A5.1. and A5.2.

National Fire Protection Association (NFPA) codes and pamphlets are available from NFPA, Publications Service Department, Batterymarch Park, Quincy MA 02269-9990.

Compressed Gas Association (CGA) pamphlets are available from the Compressed Gas Association, Inc., 1235 Jefferson Davis Highway, Arlington VA 22202.

The Accreditation Manual for Hospitals can be obtained from Joint Commission on Accreditation of Healthcare Organizations, 875 North Michigan Ave., Chicago IL 60611-1846.

NOTE:

The AFMLL presents periodic data on prices and code revisions. You can also get it from the publishers.

A5.4. Forms Needed for Management. Effective management of a facility management organization may require these forms:

AF Form 55, Employee Safety and Health Record

AF Form 332, Base Civil Engineer Work Request

AF Form 601, Equipment Action Requests

AF Form 711, USAF Mishap Report

AF Form 714, Customer Complaint Record

AF Form 765, Hospital Incident Statement

AF Form 979, DANGER TAG

AF Form 980, CAUTION TAG

AF Form 1430, Real Property Accountable Record - Buildings

AF Form 1841, Maintenance Action Sheet

DD Form 1348-1, DOD Single Line Item Release/Receipt Document

DD Form 1391, FY 19___ Military Construction Program

DD Form 1391C, FY 19___ Military Construction Project Data

Attachment 6

NONMEDICAL DEVICE CODES AND LIFE EXPECTANCY

A6.1. Table A6.1. presents a list of non-medical device codes available in the MEDLOG system for inventory control.

Table A6.1. Non-Medical Device Codes.

| NOMENCLATURE | LIFE EXP | DEVICE- CODE |
|--|-------------|-----------------|
| AudioVisual, PA/Stereo Equipment | 10 | N1101 |
| AudioVisual, Photography Equipment | 8 | N1102 |
| AudioVisual, Projectors, All | 10 | N1103 |
| AudioVisual, Televisions and Monitors | 8 | N1104 |
| AudioVisual, Video Recorders, Players, and Cameras | 8 | N1105 |
| Bar Code Equipment | 8 | N1202 |
| Beepers/Pagers | 8 | N1701 |
| Boilers | 20 | N3064 |
| Compressor | 15 | N3022 |
| Conveyor System, NonFood Service | 15 | N1501 |
| Copiers | 7 | N1203 |
| Document Handling Equipment (Feeder, Sorter, etc.) | 8 | N1201 |
| Dryers, Laundry | 10 | N4102 |
| ELEVATOR | 20 | N3006 |
| Electronic Filing Systems | 10 | N1211 |
| Embossing and Sign Making Equipment | 10 | N1204 |
| Emergency Generators | 12 | N3029 |
| Fax Machines | 8 | N1205 |
| Fire Protection Systems | 20 | N3180 |
| Floor Maintenance Equipment | 10 | N4101 |
| Food Service, Carts | 8 | N7001 |
| Food Service, Food Preparation | 10 | N7002 |
| Food Service, Food Storage, Cold | 12 | N7003 |
| Food Service, Patient Tray Assembly | 8 | N7004 |
| Food Service, Serving Line | 10 | N7005 |
| Food Service, Warewashing Equipment | 10 | N7006 |
| Forklifts and Pallet Jacks | 10 | N1502 |

| NOMENCLATURE | LIFE EXP | DEVICE- CODE |
|--|-------------|-----------------|
| HVAC, Air Conditioning Unit | 15 | N3021 |
| HVAC, Air Handlers | 15 | N3034 |
| HVAC, Chillers | 15 | N3030 |
| Ice Makers, All | 10 | N4301 |
| Lawn Maintenance Equipment | 10 | N4201 |
| Line Isolation Equipment | 20 | N4303 |
| Med Gas, Alarm Panels | 20 | N3301 |
| Med Gas, Compressor | 15 | N3302 |
| Med Gas, Oxygen Storage System | 15 | N3303 |
| Med Gas, Vacuum System, Medical/Dental | 20 | N3304 |
| Medical Waste, Air Scrubbers | 15 | N3501 |
| Medical Waste, ETO, Emissions Control | 15 | N3502 |
| Medical Waste, Incinerator | 10 | N3503 |
| Medical Waste, Pollution Control Equipment | 15 | N3504 |
| Medical Waste, Shredder/Disintegrator | 12 | N3505 |
| Medical Waste, Sterilizers/Compactor | 12 | N3506 |
| Microfiche Reader | 10 | N1206 |
| Microwave Leakage Detector | 8 | N1901 |
| Nurse Call System | 15 | N4304 |
| Ovens, Microwave | 8 | N4305 |
| Radio, Two-Way | 8 | N1704 |
| Refrigerators, Household Type | 10 | N1520 |
| Refrigerators, Walk-In (NonFood Service) | 10 | N1503 |
| Safes | 25 | N1207 |
| Scales, NonMedical | 10 | N1509 |
| Sealing Machines | 9 | N1510 |
| Sewing Machines | 15 | N4105 |
| Shelving, Warehouse | 15 | N1504 |
| Shredder, Paper | 10 | N1208 |
| Signature Analyzer | 8 | N1902 |
| Telephone Answering Equipment | 12 | N1702 |
| Telephone Switch Equipment | 12 | N1703 |
| Time Recording Equipment | 10 | N1209 |
| Tools, Band Saw | 15 | N1601 |

| NOMENCLATURE | LIFE EXP | DEVICE- CODE |
|---|-------------|-----------------|
| Tools, Drill Press | 15 | N1602 |
| Tools, Saws (Bench, Hand, Jig, Rip, Etc.) | 10 | N1603 |
| Tools, Welding Outfits | 15 | N1604 |
| Transcription and Dictation Equipment | 8 | N1213 |
| Transcription/Voice Recognition Systems | 8 | N1212 |
| Typewriter | 12 | N1210 |
| WRM, Environmental Control Units | 15 | NW001 |
| WRM, Generator Set, Mobile | 12 | NW002 |
| WRM, Heater, Duct, Portable | 12 | NW003 |
| WRM, Power Distribution Panels | 15 | NW004 |
| WRM, Shelters, Expandable (ISO) | 15 | NW005 |
| Wall Washing Machines | 10 | N4104 |
| Washers, Laundry | 15 | N4103 |
| Water Purifiers and Softeners | 10 | N4302 |